



presents a

program of technical

service relating to

the use of woodwork

in architecture

a continuing series of brochures

**for quick, easy reference when designing and specifying
all types and applications of architectural woodwork**

Next month, AWIA . . . the Architectural Woodwork Institute of America . . . will send you the first of a continuing series of factual, technical brochures containing the specific information and data which experience indicates will help you design architectural woodwork more effectively and economically. This long-needed service will give you essential facts and valuable suggestions for detailing and specifying . . . will keep you abreast of design trends in woodwork . . . show you how to use various wood materials for best results.

Special types of installations to be treated in these brochures include such items as custom made doors, windows, moldings and trim, cabinetwork, casework and fixtures, paneling, stairs, plus other items of custom millwork as research and experience indicate will be helpful to you.

authentic technical data

Each brochure will include actual or suggested detail drawings, photographs of outstanding installations, and data to include when specifying. Actually, this service will fill a long-felt need by providing a type of valuable technical information which has been seldom presented to architects and designers in this manner.

consultation service on special problems

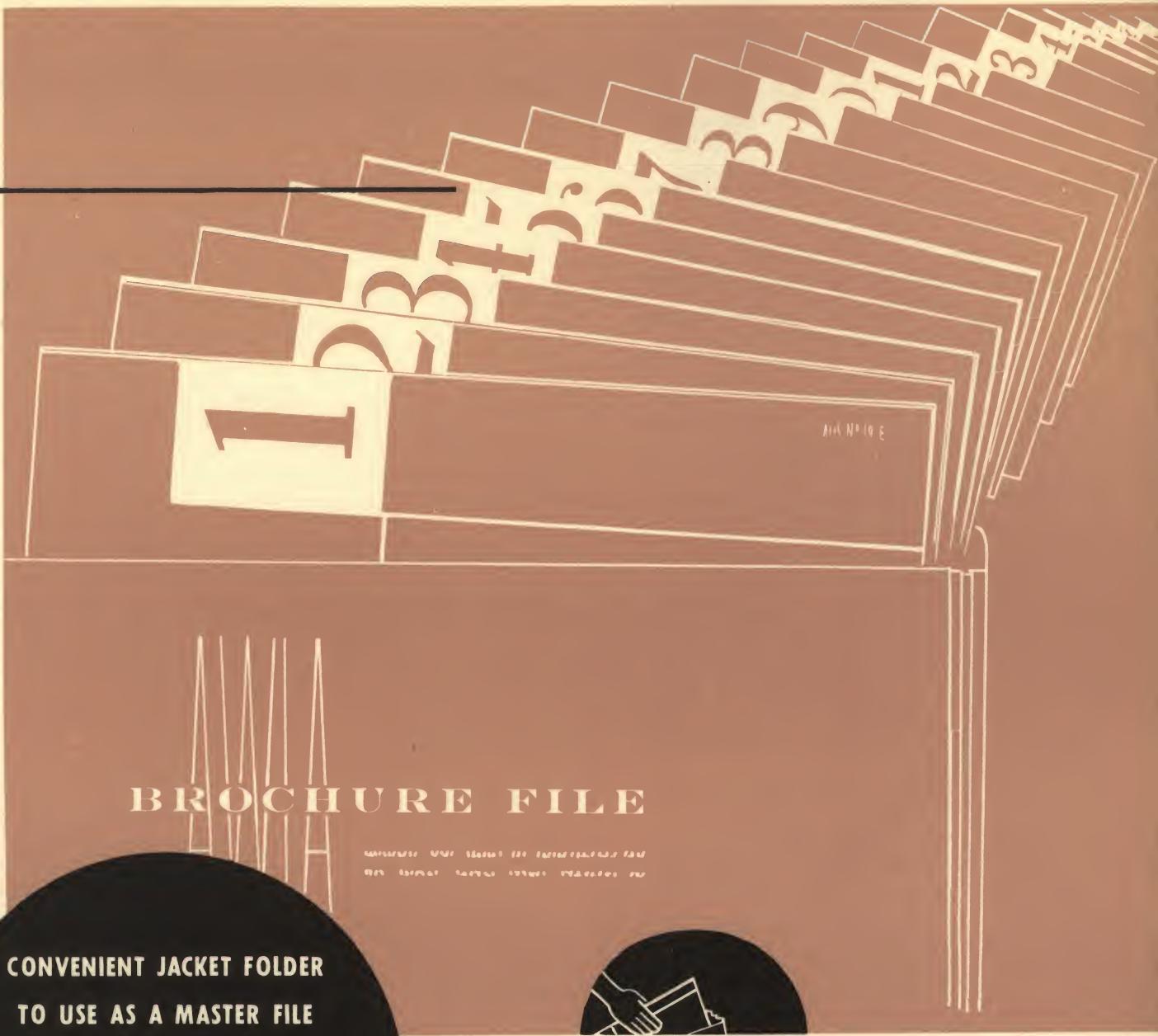
You are invited to contact AWIA or its member firms to secure special information on your every architectural woodwork problem. The Architectural Woodwork Institute of America, through its staff specialists and the combined knowledge of its members, plus the cooperation of industry suppliers, is in a position to give you valuable assistance.

dependable local sources for architectural woodwork

Each AWIA member in your locality is a manufacturer of all forms of quality architectural woodwork. He is a specialist qualified to offer you valuable assistance on detailing and specifying. Because of his specialized knowledge and experience, he can authoritatively advise you on the choice of woods, cost, availability and serviceability. He can often suggest economies in construction that will not affect the finished appearance or durability of the project.



This handy, time-saving data and idea service is furnished to you without cost



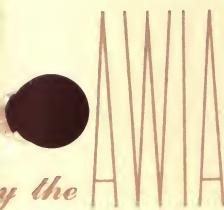
BROCHURE FILE

CONVENIENT JACKET FOLDER TO USE AS A MASTER FILE

With your first AWIA brochure you will be sent this sturdy master folder (AIA 19-E—Millwork) in which to keep all future AWIA brochures on architectural woodwork, for quick, handy reference.

AWIA brochures will provide specifications, details and installation data on:

- GENERAL INTRODUCTION
- EXTERIOR DOORS
- EXTERIOR CORNICES
- ENTRANCES, CUPOLAS AND COLUMNS
- SASH AND WINDOWS
- MOLDINGS AND INTERIOR TRIM
- INTERIOR PANELING—
SOLID AND VENEER
- CABINET AND CASEWORK
- FIXTURE WORK
- INTERIOR DOORS
- PLYWOOD APPLICATIONS
- STAIRWAYS
- GLUED LAMINATED UNITS
- BANK AND OFFICE WOODWORK
- ECCLESIASTICAL WORK
- WOOD SPECIES
- WOOD CONTROL TREATMENT
AND PRESERVATION
- FINISHES ON WOOD



by the AWIA member plants in your locality.



**how the AWIA research and
service program works for you**

AWIA is a Trade Association comprised of quality architectural millwork firms in the United States and Canada. It was founded October 16, 1953. Its chief purpose is to serve the architectural profession by providing factual and technical data relating to the better utilization of woodwork in architecture.

In addition to the services outlined on the previous page, the activities of the AWIA will include technical research on various aspects of architectural woodwork; the formulation of basic architectural woodwork standards applicable throughout the United States and Canada, and the formulation of architectural woodwork standards to serve particular regional needs.

Architects are invited to recommend ways in which AWIA can be of greatest service, or to suggest special aspects of architectural woodwork on which they would like more information.

ARCHITECTURAL WOODWORK

1 9 5 4



GENERAL
INTRODUCTION

(REVISED)

ARCHITECTURAL WOODWORK INSTITUTE



Reception office, Material Service
Corporation, Chicago, Illinois

Friedman, Alschuler & Sincere,
Architects, Chicago

the Purpose and Functions of

ARCHITECTURAL WOODWORK INSTITUTE

- To encourage wider usage of architectural woodwork.
- To rekindle enthusiasm for the inherent beauty of interior and exterior woodwork.
- To furnish architects and specifiers with technical information.
- To encourage the formulation and publication of regional standards pertaining to quality, assembly of components, treatments and finishes.
- To document the extensive research in wood technology now being carried on by private institutions and by public agencies, in order to produce better woodwork for buildings more economically.
- To act as a clearing house for knowledge pertaining to new methods, or new solutions for recurring problems having to do with architectural woodwork.

ADVICE ON SPECIAL PROBLEMS

ARCHITECTURAL WOODWORK INSTITUTE will endeavor to provide satisfactory answers to questions or problems concerning woodwork presented by architects, designers, specifiers, draftsmen and students. Colleges of Architecture are also invited to avail themselves of this service. Write or call the Institute at its headquarters office.

LOCAL CONSULTATION

Members of the Architectural Woodwork Institute are qualified to be of service to the design profession with practical suggestions and guidance relative to specifications, fabrication and installation. Please refer to the enclosed envelope for the name and address of the Member nearest you.

TECHNICAL AND EDUCATIONAL BROCHURES

This is "General Introduction", No. 1, in a series of brochures that will be issued bi-monthly to architects. Each brochure will be devoted to a separate element of architectural woodwork such as "Paneling", "Cabinetwork", "Doors", "Windows", etc. To retain all brochures, reserve a space in your Millwork file for the accompanying portfolio.

PUBLICATION OF ARCHITECTS' WORK

Outstanding examples of exterior and interior woodwork installed during the past decade will be illustrated in future brochures. Architects are invited to send drawings and photographs of their favorite details, together with the names and locations of the buildings, directly to the Architectural Woodwork Institute, 332 South Michigan Avenue, Chicago 4, Illinois. All items deemed suitable for publication will be given appropriate credits; and all material received will be returned, postpaid, after review.

How to counteract the inevitable but reversible movement of wood in buildings

Dimensions and form of wood, regardless of specie, are affected by changes in relative humidity—not significantly by changes in temperature.

Wood is hygroscopic, therefore it will shrink or swell if it is allowed to give off or absorb moisture. The ability of wood to stay in place is a measure of change in dimension and shape. For a particular specie, dimensional stability of wood depends on its:

- Shrinkage factor
 - Rate of absorption
 - Conditions of seasoning
 - Moisture content at time of use
 - Direction of grain

1. SELECT WOOD POSSESSING A DEGREE OF ABILITY TO STAY IN PLACE COMPATIBLE WITH USAGE

Groupings below represent approximate gradations from woods which are indicated to possess highest ability to stay in place (Group I) to those which possess such ability in lesser degree (Group IV), under similar use conditions. The spread between any two adjacent groups is hardly discernible in actual use.

HARDWOODS

Modified from "Lumber Grade-Use Book."

The A.W.I. member who is furnishing this brochure has information concerning availability of these species in your area

GROUP I	GROUP II	GROUP III	GROUP IV
White Ash	Red Alder	Rock Elm	Beech
Butternut	Black Ash	Soft Elm	Red Gum
Cherry	Blue Ash	Hard Maple	Magnolia
Chestnut	Basswood	Soft Maple	
Poplar	Birch	Red Oak	
Walnut	Hackberry	White Oak	
Willow			Tupelo

SOFTWOODS

Modified from "Standard Terms for Describing Wood"

The A.W.I. member who is furnishing this brochure has information concerning the availability of these species in your area.

GROUP I

Cedar, Alaska
Cedar, eastern red
Cedar, western red
Cedar, northern white
Pine, northern white
(*Pinus strobus*)
Pine, sugar
(*Pinus lambertiana*)
Redwood

GROUP II

Cedar, Port Orford
Cypress, southern
Douglas fir (Rocky
Mountain type)
Fir, balsam
Fir, white
Hemlock, eastern
Pine, ponderosa
(*Pinus ponderosa*)
Spruce, Engelmann

GROUP III

Douglas fir, (Coast type)
Douglas fir
(Intermediate type)
Hemlock, western
Larch, western
Pine, longleaf
Pine, Norway
Pine, shortleaf
Pine, Idaho
(*Pinus monticola*)
Spruce, Sitka

FOREIGN HARDWOODS COMMONLY USED

African Mahogany • Honduras Mahogany • Philippine Wood • Brazilian Pine • Teak

2. SPECIFY WOOD THAT IS APPROPRIATELY SEASONED AND KILN DRIED

MINIMIZE the effects of moisture content variations by installing the wood at a moisture content corresponding to the average atmospheric conditions to which it will be exposed.

- Wood on the interior of buildings maintains moisture content values which vary only a few percent from average during different seasons.
 - Wood exposed to the exterior can absorb relatively large quantities of surface water.
 - Extremes in humidity are seldom reflected in the wood itself because the actual changes in the atmosphere far exceed any variation in moisture content which may be brought about by changed humidity.

RECOMMENDED MOISTURE CONTENT VALUES FOR WOODWORK AT TIME OF INSTALLATION FOR CONTINENTAL UNITED STATES

In percentages of oven-dry weight. Modified from "Wood Handbook."

SERVICE CONDITION	Quantity—Entire lots are satisfactory if individual pieces are in prescribed range	Dry South-western States	Damp Southern Coastal States	Remainder of the United States
INTERIOR WOOD FINISH	Average	6	11	7
	Range permitted in individual pieces	4-9	8-13	5-10
EXTERIOR TRIM	Average	9	12	12
	Range permitted in individual pieces	7-12	9-14	9-14

RECOMMENDED MOISTURE CONTENT VALUES FOR WOODWORK AT TIME OF INSTALLATION FOR DOMINION OF CANADA

In percentages of oven-dry weight.

SERVICE CONDITION	Quantity—Entire lots are satisfactory if individual pieces are in prescribed range	Alberta, Saskatchewan and Manitoba	Ontario and Quebec	East and West Coast Provinces, including Newfoundland
INTERIOR WOOD FINISH	Average Range permitted in individual pieces	6 4-9	7 5-9	10 8-12
EXTERIOR TRIM	Average Range permitted in individual pieces	12 10-15	12 10-15	13 11-15

3. APPLY WATER REPELLENT TREATMENTS OR SURFACE COATINGS WHICH ACT AS RETARDANTS TO ABSORPTION OF MOISTURE

WATER REPELLENT PRESERVATIVES . . .

**promote Dimensional Stability particularly in softwoods,
and in any sap wood, used in exterior woodwork.**

Water Repellent Preservatives, which contain the ingredients needed for both water repellents and preservation in the same mineral spirits solution, make wood highly resistant to fungus attack and to swelling, shrinking and warping when exposed to rapid changes in moisture conditions or temperature.

The liquid thoroughly penetrates the surface portions of the wood. Evaporation of the solvent leaves an elastic permanent film which lines the tiny cell walls and is resistant to the passage of moisture. This gives the wood units a moisture-controlling and rot-preventing armor, without causing the wood to swell.

The preferred methods of treatment are by dipping and the vacuum process, but other methods of application are often used, such as brushing and mopping. After treatment, the removal of even a thin surface layer may risk exposure of untreated wood. If some cutting must be done, trimmed pieces should be re-treated before the parts are fastened in place.

The treatment provides a base coating that bonds well with paint materials, but no paint or varnish should be applied to the wood for a period of 48 hours.

The degree of water repellency obtainable with Water Repellent Preservatives will furnish useful protection to items of woodwork which are not to be painted or finished until they have been installed; and will shield the wood during transit from the mill.

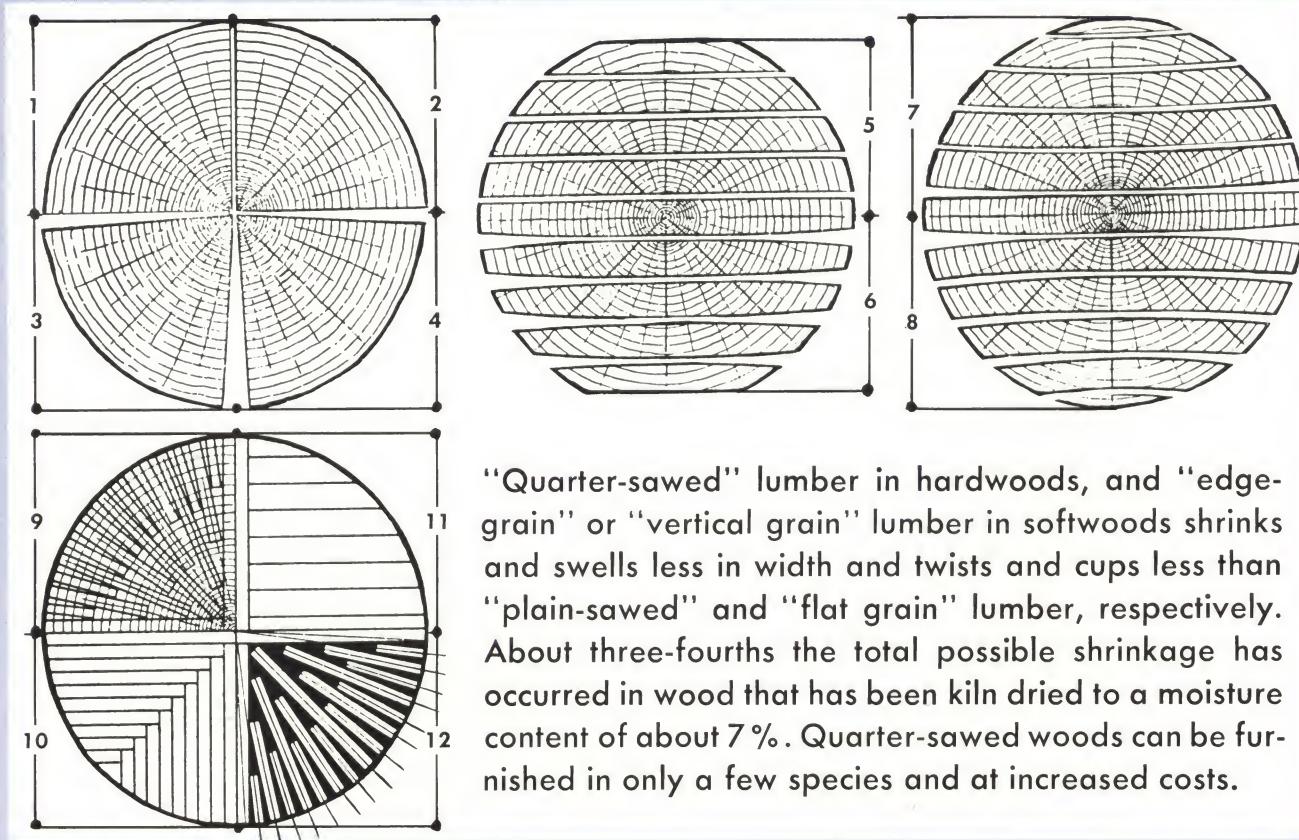
SURFACE COATINGS . . .

to minimize changes in moisture content

Effective protection against fluctuating atmospheric conditions is furnished by coatings of various moisture retardant finishes, provided that the coating is applied to all surfaces of wood through which moisture might gain access. No coating is entirely moisture-proof. There is as yet no way of keeping moisture out of wood that is exposed to dampness constantly, or for prolonged periods.

- A substantial coating that is relatively impervious to moisture is necessary. Merely "plugging the wood pores" is not sufficient.
- The first coat (primer) applied to bare wood rarely forms a substantial, impervious coating.
- Linseed oil alone is low in effectiveness even when a substantial coating has been achieved.
- Increase the effectiveness of drying oils by:
 1. Adding resins, forming varnish Effective
 2. Adding pigments, forming paint More effective
 3. Adding pigment to varnish, forming enamel Most effective
 4. Incorporating more resin or pigment, within practical limits, for greater effectiveness.
- Nitrocellulose lacquers are considered suitable for interior use only. They do not prove so effective as interior varnishes.

COUNTERACTING MOVEMENT BY PROCESS OF MANUFACTURE



Figs. 1, 2.—Oak log cut into four quarters.

Figs. 3, 4.—Exaggerated diagram of shrinkage.

Fig. 5.—Plain-sawed timber.

Fig. 6.—Unequal shrinkage in thickness and width.

Fig. 7.—"Cupping" or casting action due to shrinkage.

Fig. 8.—Exaggerated diagram showing movement.

Figs. 9 & 12.—Quarter-sawn wood—for maximum figure and standing quality. Note medullary rays.

Fig. 10.—Less wasteful method to obtain advantages of quarter-sawing.

Fig. 11.—Another variation to obtain planks.

Guide... TO INSTALLATION PROCEDURES

PRECAUTIONARY MEASURES:

Regarding Plaster and Grounds

Wood trim could be installed a week after application of last coat of plaster, if plaster were the only consideration. The plaster, however, is actually drier than the wood grounds and jambs against which trim will be placed. Moisture content of rough carpentry, rather than plaster, determines when it is safe to install interior woodwork. Members of A.W.I. generally use electric moisture instruments for accurately gauging moisture content.

Regarding Back-Priming

Back-priming is a waste of time and money if trim is erected before walls are sufficiently dry. A coat of varnish or asphaltic paint is of value when interior trim receives part of finish before delivery. Inexpensive coatings can be put on the back of millwork, provided coatings are equal in moisture resistance to coatings on exposed surfaces. In lieu of "back-priming," specify treatment with water repellent preservative, which penetrates the end grain of pieces, where most coatings are ineffective; and which furnishes protection against blue stain and decay.

SUGGESTED SPECIFICATIONS:

Temporary Heat

Provide temporary heat during plastering operations in order to prepare the building properly for interior woodwork. Temperatures during the night shall be maintained at about 15°F above outside temperatures and shall not be allowed to drop below 70°F during the summer, or 62°F to 65°F when outside temperatures are below freezing. Heat shall be adequate to hasten the drying of the plaster, the green masonry, and the moisture in rough framing, wood blocking and grounds.

Temporary Ventilation

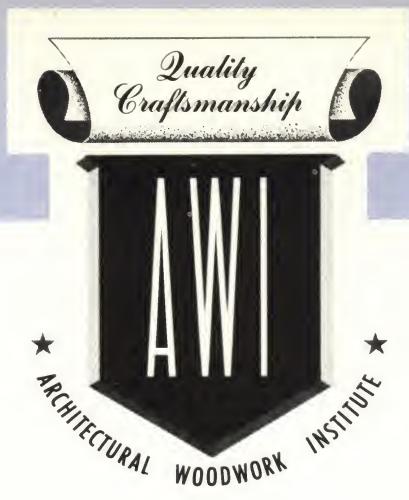
During plastering operations, adequate ventilation shall be provided at all times of the year to prepare the interior for installation of woodwork. During the winter, when heat is being used, windows shall be opened slightly at the top, on the leeward side of the building. The maximum amount of ventilation shall be available immediately following fresh coats of plaster. After the bulk of the water has evaporated, the amount of ventilation shall be reduced to permit higher temperatures.

Care and Handling

Kiln-dried material shall not be delivered to the site until needed. All woodwork shall be protected from weather while in transit from the mill to the job. When delivered at the site, material shall be placed under waterproof cover immediately and shall be protected from the ground. Woodwork shall not be stored in the new building until all plastering is reasonably dry.

Water Repellent Preservative

Consult a local member of the Architectural Woodwork Institute about the advisability of treatment of various woods for interior and exterior use.



ON-THE-JOB-SERVICE RENDERED BY EACH MEMBER MANUFACTURER OF A.W.I.

- Patterns his product directly from individual designs, profiles and specifications prepared by an architect.
- Examines job conditions.
- Provides complete shop drawings, when required by the specifications.
- Proffers samples upon request, showing the kinds of woods and veneers that are contemplated for use under a particular contract, with the explicit understanding that minor variations from the proffered samples and from wood characteristics are to be expected.

ACKNOWLEDGEMENTS

The Architectural Woodwork Institute acknowledges the assistance of the following authorities, and their publications, in the preparation of this brochure:

American Institute of Architects, The Octagon,
Washington 6, D.C.

Forest Products Laboratories of Canada

Architectural Millwork Research, Vancouver
10, B.C.

Forest Products Research Society, University
Station, Madison, Wisconsin

National Lumber Manufacturers Association,
Washington 6, D.C.

Figures 1-12: Reproduced from "Modern Cabinet Work: Furniture and Fitments" by John Hooper, by courtesy of the author and the J. P. Lippincott Company of Philadelphia.

U.S. Forest Products Laboratory, Madison 5,
Wisconsin

Material written and edited by James Arkin, A.I.A.

FOR ADDITIONAL INFORMATION, CALL OR WRITE:

A Member Company listed on the card contained in the enclosed envelope

or

ARCHITECTURAL WOODWORK INSTITUTE

332 SOUTH MICHIGAN AVENUE • TELEPHONE WABASH 2-8855 • CHICAGO 4, ILLINOIS

ARCHITECTURAL WOODWORK

1 9 5 4



CABINET
WORK

ARCHITECTURAL WOODWORK INSTITUTE



Architectural Woodwork Exhibit
"The World of Hardwoods"
Museum of Science & Industry
Chicago, Illinois

Jules Marling,
Chicago, Illinois

Architect

What is cabinet work?

The word "cabinet" is derived from the fine chests of drawers which were used for the safe-keeping of precious articles by the nobility of Western Europe during the Renaissance. These items of furniture derived their name in turn from the private chambers, or "cabins," in which they were placed. The term went through a long period of evolution in England, and eventually came to refer to a variety of hollow forms, both movable and fixed, limited by three or more joined planes of fine woodwork. In 1902 the following definition appeared in "A Dictionary of Architecture and Building" by Russell Sturgis, F.A.I.A.:

"**CABINETMAKING.** The art and the trade of making fine woodwork, whether for furniture (to which the term was formerly confined) or for the interior finish of houses, ships, and offices. It is distinguished from the rougher and less elaborate carpenter work by the careful and accurate fitting and high finish which it involves, by the lightness and relatively small scale of its productions and by its predominant use of fine and hard woods.

In carpentry the pieces used are relatively large, and secured by nailing in the majority of cases, while the exterior finish is commonly painted. In cabinetmaking the pieces are small, glue enters largely into the joining of parts, and fine varnishing and polishing are required for the finish."

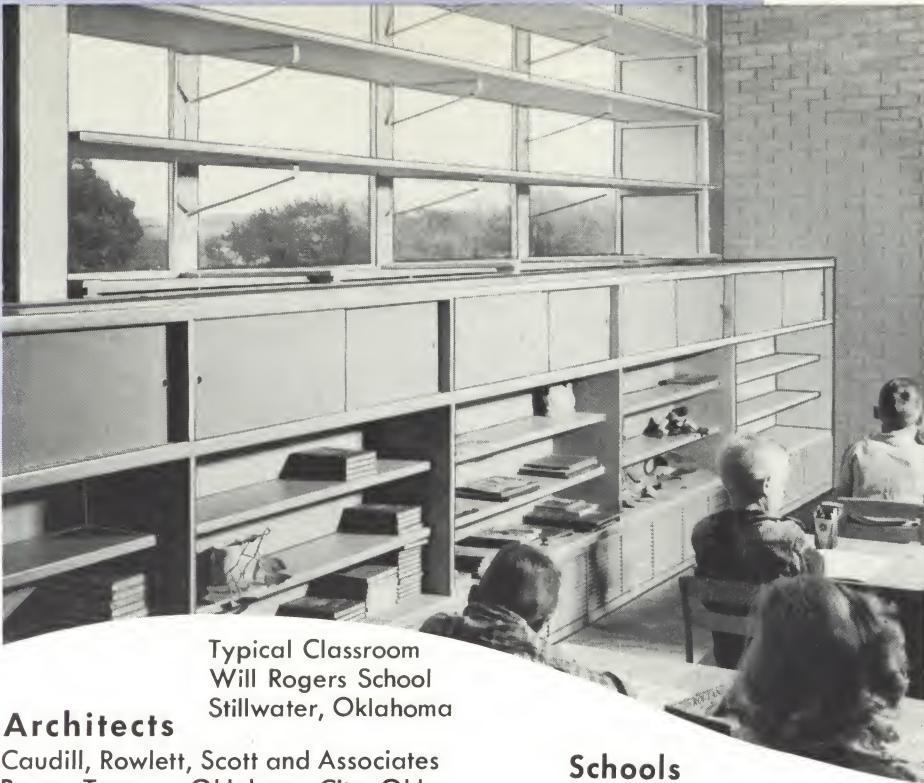
The connotation has changed during the past half century, along with changes in the economy, and the whole approach to Design. Today, cabinet work presupposes precision woodwork, usually but not always, finished on the job.

In some areas, and among some manufacturers, a distinction is made between millwork and cabinet work, all of which is essentially special millwork. Cases, counters and cabinets which are delivered to the job in prefit sections, with doors fitted or unfitted and without finish hardware, are sometimes referred to as Millwork; prefit sections shipped to the job with all doors installed, with all necessary finish hardware, and working surfaces permanently fastened are sometimes referred to as Cabinet Work, whether or not stain or varnish is applied as a manufacturing operation.

Architects would be well advised to specify all types of special millwork, including cabinet work, under a separate, all-embracing trade division entitled "ARCHITECTURAL WOODWORK."

PUBLICATION OF ARCHITECTS' WORK

Significant examples of exterior and interior woodwork installed during the past decade will be published in future brochures. Architects and other designers are always invited to submit drawings and photographs of their favorite details of architectural woodwork, together with pertinent specification data, objective comments, and the names and locations of buildings, to the Architectural Woodwork Institute, 332 South Michigan Avenue, Chicago 4, Illinois. Items deemed suitable for reproduction will be given appropriate credits; and all material received will be returned, postpaid, after review.



Typical Classroom
Will Rogers School
Stillwater, Oklahoma

Architects

Caudill, Rowlett, Scott and Associates
Bryan, Texas — Oklahoma City, Okla.
and Philip A. Wilber
Stillwater, Oklahoma

Schools



Open Storage

Typical
Classroom
Westwood School
Stillwater,
Oklahoma

Comments by Architects:

"Simplicity and utility are the key factors in our design process. We try to eliminate bulky and tricky cabinet work in our schools, and maintain harmony between aesthetics and function."

SPECIFICATION NOTES:

The cabinet work for the Stillwater Elementary Schools was fabricated on the job. White pine was used on all exposed portions of cabinets, storage units, fronts of drawers, and open shelving.

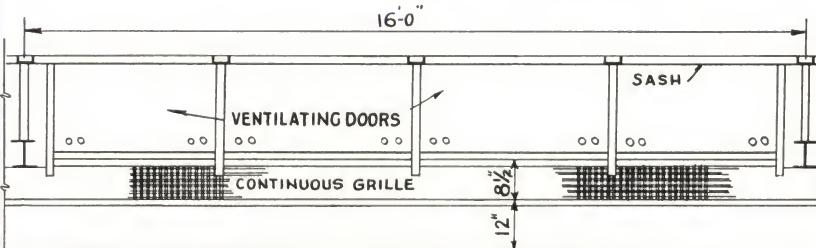
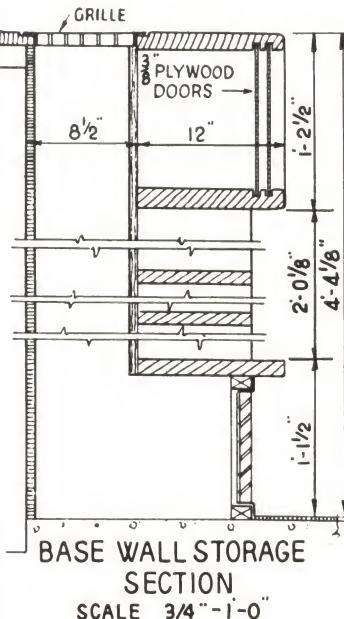
Southern yellow pine was used on concealed portions of cabinets.

All doors are interior grade plywood, superior surface exposed.

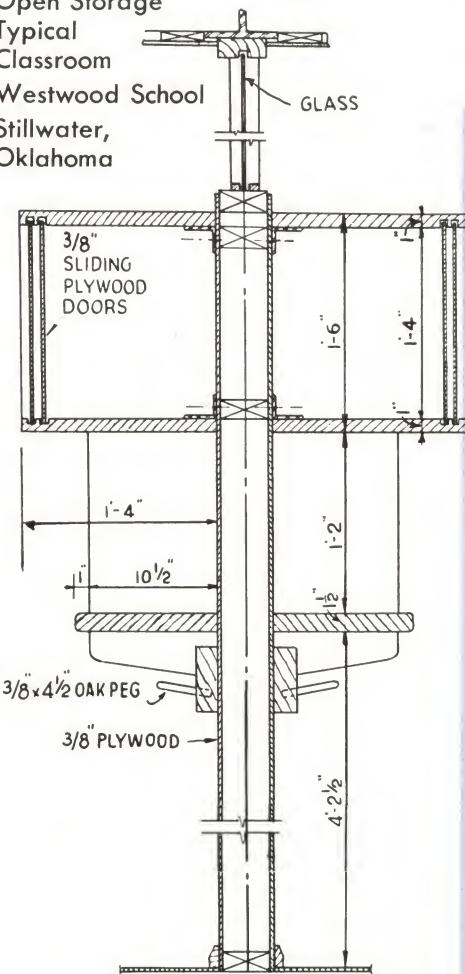
FINISH

Exterior of cabinets painted with two coats primer and one coat enamel. Inside of cases, drawers, shelving, and backs of sliding doors were sanded, dusted and given two coats of white shellac.

Hardware consisted of sheave, track and flush pulls for sliding doors.



PLAN OF BASE CABINETS SCALE: 1/4"-1'-0"



HANGING WALL CABINET SECTION
SCALE: 3/4"-1'-0"



School

Home Economics Room
Burlington High School
Burlington, Ontario

Architects

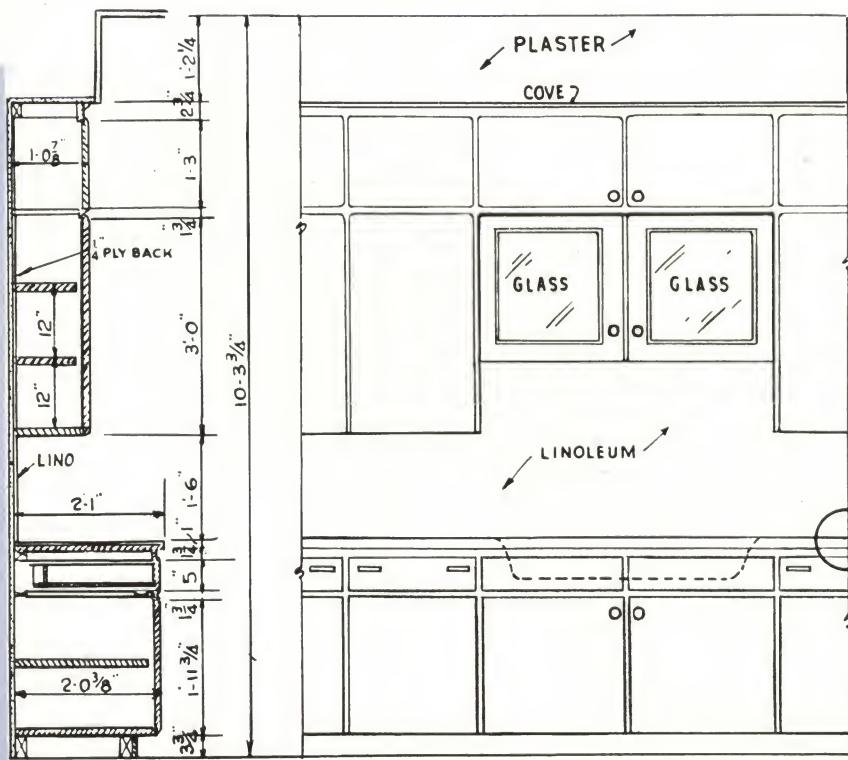
Shore & Moffat
Toronto, Ontario

Comments by Architects:

"In school work, it is our usual practice to specify a wood that will take a stain finish—usually fir or birch. This keeps maintenance to a minimum. This room departs from this as we wanted a "paint" finish. At each of the three instruction centres, the lower cupboards have been painted a different colour. This relieves the monotony of so many similar sized cupboards; it distinguishes each centre and provides different coloured backgrounds for instructional purposes which can be altered without too much cost."

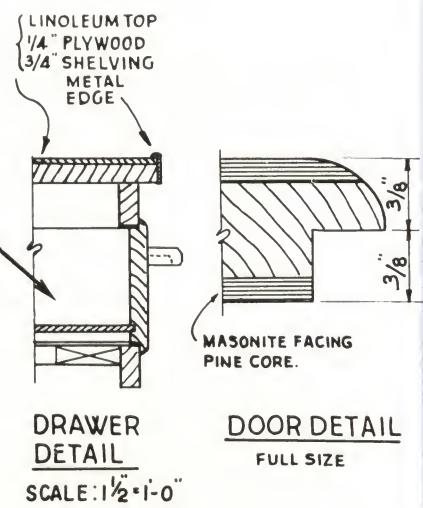
SPECIFICATION NOTES:

The body of the fitments was constructed of white pine "D" select, and the doors of hardboard veneer over a lumber core. All plywood referred to on the drawing was fir.



CABINET SECTION
SCALE: 3/8" 1'-0"

CABINET ELEVATION
SCALE: 3/8"-1'-0"





Residence

Dining Room for Dr. and Mrs. Mork, Jr.
Worthington, Minnesota

Architects

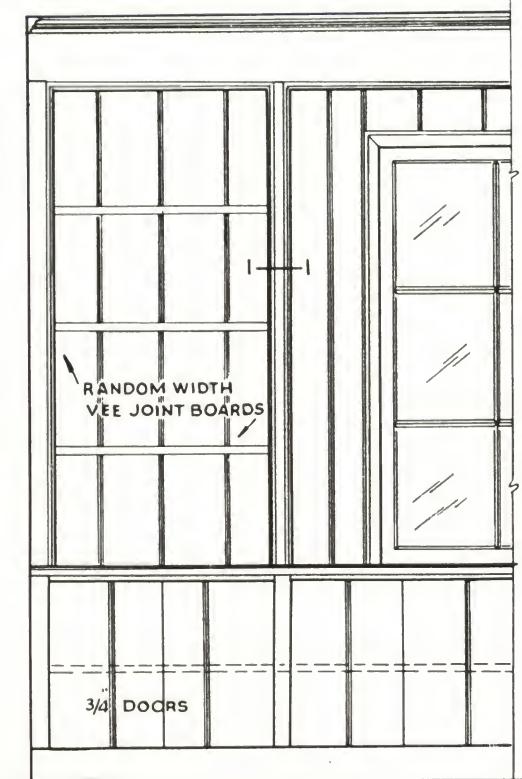
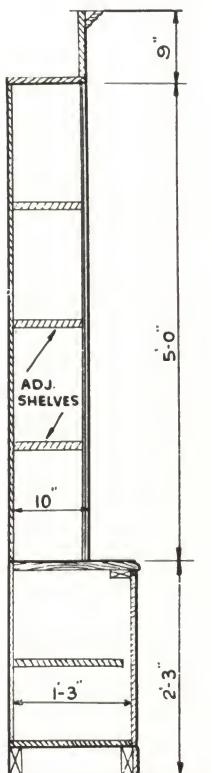
Harold Spitznagel
& Associates
Sioux Falls, S. D.

Comments by Architects:

"Our client insisted on a design along traditional lines. He preferred a built-in feature because it is easier to maintain and relatively less expensive than a movable piece of furniture. We felt that the only appropriate solution was a simplified detail with a minimum of ornamentation."

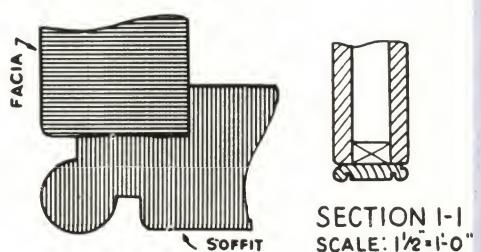
SPECIFICATION NOTES:

All wood is unselected birch. All of the work was executed in a wood-working shop, and not fabricated at the site. The finish is enamel.



CABINET SECTION

CABINET ELEVATION
SCALE: 1/2=1'-0"



BEAD DETAIL
FULL SIZE



VEE JOINT DETAIL
FULL SIZE



School

Typical Classroom
John B. Turner School
West Chicago, Illinois

Architects

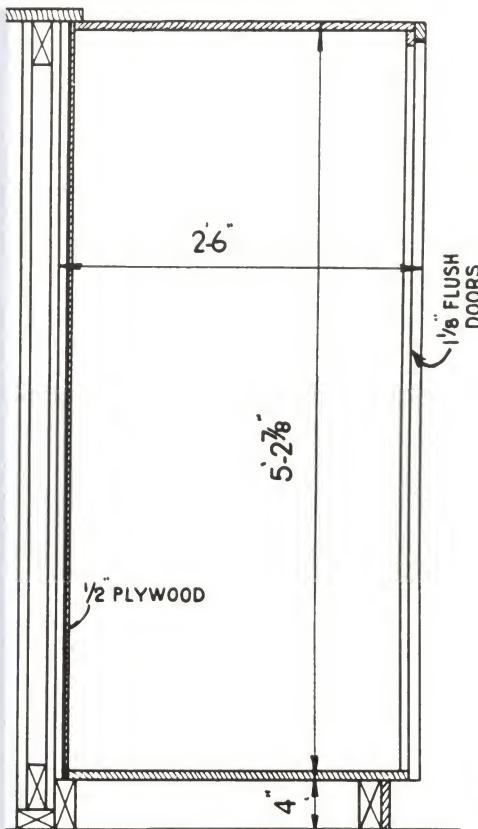
Frazier & Raftery
Geneva, Illinois

Comments by Architects:

"The work was assembled on the job, after it was fabricated in a woodworking plant. In installations of this type, we suggest that the carpenters allow some tolerance for movement, because of high humidity during the summer when the classrooms are closed."

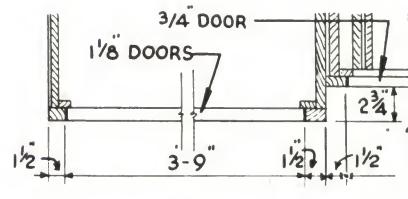
SPECIFICATION NOTES:

The cabinet on the far left is for the storage of everyday supplies used in a typical grade school classroom. The flat trays hold 24" by 36" sheets of paper. The entire counter is covered with 1/16" sheet vinyl plastic, rounded over the edge and applied with adhesive. All exposed wood in the photograph is plain-sawn red oak.



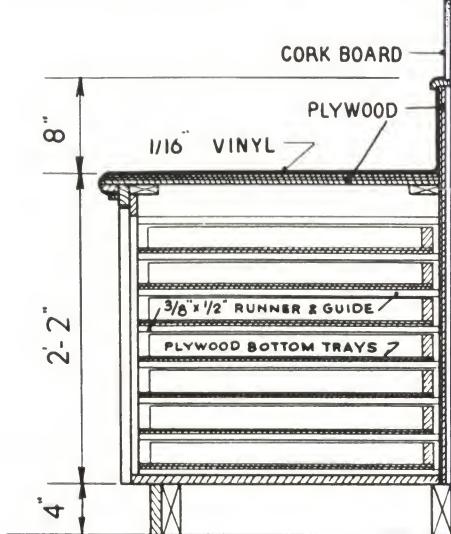
SECTION AT STORAGE CABINET

SCALE: 3/4"=1'-0"



PLAN AT CORNER

SCALE: 3/4"=1'-0"



SECTION AT PAPER TRAYS

SCALE: 3/4"=1'-0"

SPECIFICATION GUIDE

- Cabinet work is always made of good dry material with top quality workmanship.
- Wood for cabinet work is usually fabricated from clear material free from defects.
- Specifications should explain whether exposed portions of architectural woodwork are to be finished natural, stained or painted.
- Specifications should describe the kind of wood that is intended for the inside or unexposed portions of cabinet work, such as shelves, divisions, backs and interiors of drawers. In addition to plywood, solid woods commonly used are clear cuttings of poplar, cottonwood, pine and other suitable woods.
- The trend toward textured material and rougher surfaces on the interiors of houses, schools and churches of contemporary design accentuates the desirability of specifying cabinet woods that are not necessarily clear, for reasons of appearance and economy. The quality of the cabinet work is not lessened thereby.

ARCHITECTURAL QUALITIES OF HARDWOODS

(Modified from "Lumber Grade-Use Guide" published by National Lumber Manufacturers Association)

Architectural woodwork for building interiors, including cabinet work, is always subject to specifications and details prepared by architects. This product is fabricated at millwork or woodworking plants from commercial grades of factory lumber or veneers. The quality of cabinet work of this character cannot be described in terms of sawmill grades of factory lumber.

The segregation of factory lumber into grades in the sawmill is based on the proportion of each board that, upon sawing and ripping, will yield clear or sound cuttings of various specified sizes. Therefore, that system of grading takes into account only the inherent natural characteristics of lumber such as knots, splits, wane and decay.

Commercial grading rules do not define the natural characteristics of hardwood which affect texture, evenness or fineness of grain, working and finishing properties, hardness, or other factors that influence beauty or architectural effects. In a few species, grading rules take into account variation in color between sap wood and heart wood. Examples: Sap gum and red gum; sap poplar and yellow poplar. The species known botanically as Yellow Birch is usually graded as unselected birch, which is very desirable for variation in grain and color because the sap wood (white) and the heart wood (red) both combine for effect. It is advisable, therefore, that the architect consider a number of factors not described in the grading rules when specifying the kind and character of wood for the cabinet work desired.

The specification should also describe in detail whether the various items of architectural woodwork are to be of solid wood, or veneers on plywood, and the kind of grain, natural markings, character of figure, color and method of matching desired.

SOME SOFTWOODS AND RECOMMENDED GRADES FOR ARCHITECTURAL WOODWORK

SPECIES	FINISH		LOCALITY
	Natural	Painted	
Northern White Pine	C Select & Better	C Select & Better	Northeastern U. S.
Eastern Spruce	C Select & Better	C Select & Better	Northeastern U. S.
Tidewater Red Cypress	Clear Heart	C Select Finish	Southern Gulf Coast
Idaho Pine	Supreme	Choice	
Ponderosa Pine	B & Better	C Select	Jurisdiction of Western Pine Association
Sugar Pine	B & Better	C Select	
White Fir	B & Better	C Select	
Eastern Hemlock	D & Better Finish	D & Better Finish	
Northern White Pine	B Select & Better	C Select	
Norway Pine	B Select & Better	C Select	North central part of U. S., including Michigan
Eastern Spruce	B Select & Better	C Select	
Southern Pine	B & Better Finish	C Finish	
Western Red Cedar	Selected Clear, Flat Grain	B & Better	
West Coast Hemlock	B & Better, Flat Grain	C Grade	Jurisdiction of West Coast Lumbermens Association
Douglas Fir	B & Better, Flat Grain	C Grade	
Sitka Spruce	B & Better, Flat Grain	C Grade	
Western Red Cedar	C & Better	C & Better	British Columbia
Pacific Coast Hemlock	C & Better	C & Better	Jurisdiction of W.C.L.A.
California Redwood	Clear, All Heart	A Grade	Jurisdiction of California Redwood Association

STANDARD THICKNESSES AND WIDTHS FOR MILLWORK FACTORY LUMBER



HARDWOOD			
THICKNESSES IN INCHES			
ROUGH FACTORY LUMBER	DRESSED	ROUGH FACTORY LUMBER	DRESSED
1	$\frac{3}{4}$	2	$1\frac{3}{4}^*$
$1\frac{1}{4}$	$1\frac{1}{16}$	$2\frac{1}{2}$	$2\frac{1}{4}$
$1\frac{1}{2}$	$1\frac{5}{16}$	3	$2\frac{3}{4}$
Requirements for finished thicknesses less than $\frac{3}{4}$ " are re-sawed from 1" or thicker rough lumber.		$3\frac{1}{2}$	$3\frac{1}{4}$
		4	$3\frac{3}{4}$

*Less 1/32" in some areas. Consult your local A.W.I. member for prevailing dimensions.

SOFTWOOD

The thicknesses apply to all widths and the widths to all thicknesses

MATERIAL SUITABLE FOR CABINET WORK	THICKNESSES IN INCHES		WIDTHS IN INCHES	
	ROUGH FACTORY LUMBER	FINISH AFTER SANDING	ROUGH FACTORY LUMBER	FINISH AFTER SURFACING
Finish: Millwork factory grades, such as Factory Select.	1	$\frac{3}{4}^*$	2	$1\frac{5}{8}$
	$1\frac{1}{4}$	$1\frac{1}{8}^*$	3	$2\frac{5}{8}$
	$1\frac{1}{2}$	$1\frac{1}{8}^*$	4	$3\frac{1}{2}$
	2	$1\frac{3}{4}\dagger$	5	$4\frac{1}{2}$
	$2\frac{1}{2}$	$2\frac{1}{4}\dagger$	6	$5\frac{1}{2}$
	3	$2\frac{3}{4}\dagger$	7	$6\frac{1}{2}$
	$3\frac{1}{2}$	$3\frac{1}{4}\dagger$	8	$7\frac{1}{4}$
	4	$3\frac{5}{8}\dagger$	9	$8\frac{1}{4}$
	Requirements for finished thicknesses less than $\frac{3}{4}$ " are re-sawed from 1" or thicker rough lumber.		10	$9\frac{1}{4}$
			11	$10\frac{1}{4}$
			12	$11\frac{1}{4}$
			14	13
			16	15

*Less 1/16" in some areas. { Consult your local A.W.I. member for prevailing dimensions.

†Less 1/8" in some areas. { Finished sizes in Eastern Canada vary slightly from those of Western Canada.

CUTTING LENGTHS

Lumber is cut normally at the sawmill in lengths 6 feet and up, in increments of 2 feet. Hardwoods are furnished from 6 to 16 feet, and normally not to exceed 30 to 40 percent in 14 foot and 16 foot lengths. Softwoods are predominantly 8 to 16 feet in length, but some species may possibly have a percentage of 18 and 20 foot lengths.

In both hardwoods and softwoods all lengths should be held to $1\frac{1}{2}$ inches to 2 inches under the full lengths furnished by the sawmills, because of season checking and as a consequence of kiln drying. Examples: The exact finished length to be cut from a piece of 12 foot rough lumber should not exceed 11 feet 10 inches; cuttings from 16 foot stock should not exceed 15 feet 10 inches, etc.

NOTE OF ACKNOWLEDGMENTS

In the preparation of this brochure, the Architectural Woodwork Institute gratefully acknowledges the suggestions and cooperation of the various wood species associations and of the architects and member manufacturers who submitted photographs and drawings. Extracts from "Lumber Grade-Use Guide" are published by courtesy of National Lumber Manufacturers Association. Material in this brochure was edited by James Arkin, A.I.A.

PHOTOGRAPHY CREDITS

"The World of Hardwoods," Hedrich-Blessing, Chicago. John B. Turner School: Cliff E. Lohs, Elgin, Ill.

Burlington High School: "Panda," Toronto.

Elementary Schools, Stillwater, Okla.: Hedrich-Blessing, Chicago.

Dr. Mork Residence: Hedrich-Blessing, Chicago, courtesy of Popular Home Magazine, published by United States Gypsum Co.

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ARCHITECTURAL WOODWORK

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3

WOOD FRAMES
AND
WINDOWS

ARCHITECTURAL WOODWORK INSTITUTE





LONG LASTING

YOU GET MAXIMUM

Beauty

Flexibility

IN DESIGN AND

WHEN YOU SPECIFY WOOD FRAMES AND WINDOWS

Wood windows have met architects' requirements for light and air and form for centuries. Wood windows are meeting those requirements today. In the years to come, as long as architects design buildings, wood windows will play an important role, and will continue to be designed for contemporary living of any future era.

Much has been written about the advantages of wood windows — and the case for wood sash is stronger today than ever before in the history of modern architecture. A representative of a member firm of the Architectural Woodwork Institute, who is providing you with this brochure, has — at his finger tips — detailed, technical information on the many outstanding design features and performance records of wood windows. It is his obligation and pleasure, as your supplier, to explain to you in a clear, concise manner how wood windows offer:

- Maximum insulation against heat and cold,
- Resistance to temperature change,
- Comfort of draft defying snugness,
- Protection for interior finish and drapes
- Durability and economy of maintenance, and above all —
- The easy-care good looks, to meet today's demands for distinctive architecture and decorating at a minimum cost, a problem which currently faces many architects.

The purpose of this brochure is to present prominent architectural wood installations and to give you detailed specifications on grade recommendations for wood window frames and sash — to make it easier for you to include the warmth and beauty of fine architectural wood windows in more buildings that you design.

PUBLICATION OF ARCHITECTS' WORK

Significant examples of exterior and interior woodwork installed during the past decade will be published in future brochures. Architects and other designers are always invited to submit drawings and photographs of their favorite details of architectural woodwork, together with pertinent specification data, objective comments, and the names and locations of buildings, to the Architectural Woodwork Institute, 332 South Michigan Avenue, Chicago 4, Illinois. Items deemed suitable for reproduction will be given appropriate credits; and all material received will be returned, postpaid, after review.



Medical Ward

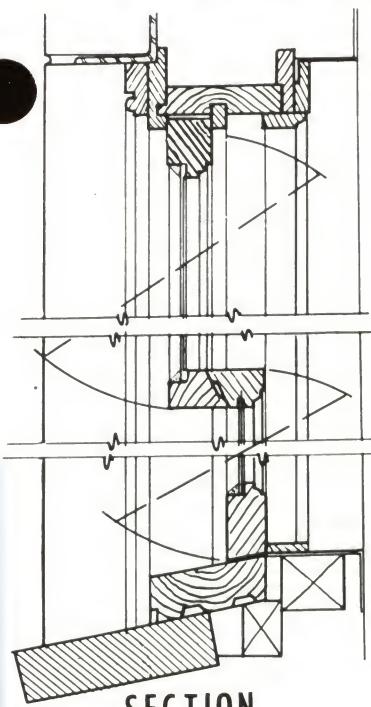
Psychiatric Ward



John J. Cochran
Veterans Administration
Hospital
St. Louis, Missouri

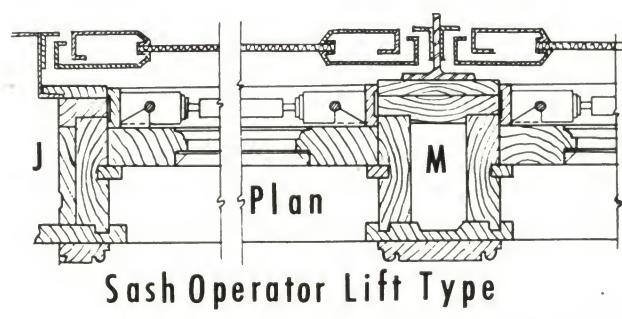
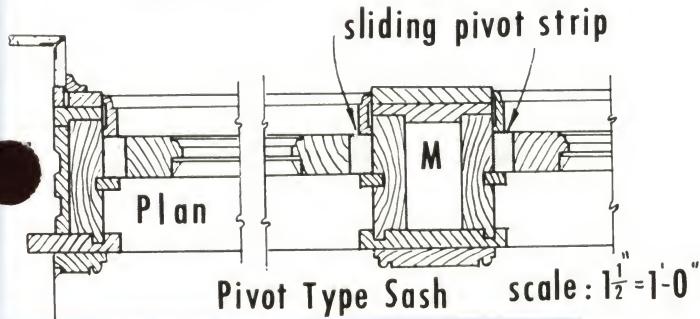
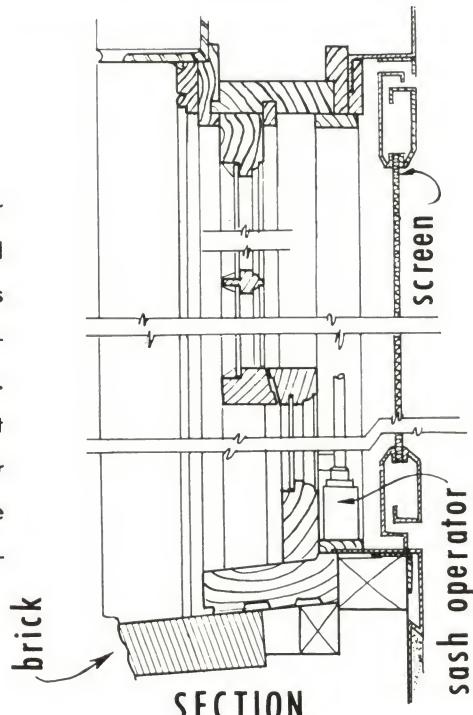
Architect:
Veterans Administration
Construction Service
Washington, D.C.

Specification Notes: Sills and brick mouldings of white pine. Blind stops of cypress. Pulley stiles and parting beads of yellow pine. Sash of white pine. Adjustable side type balances used for movable double hung windows.



Comments by *Architects*:

A manually operated removable crank under the detention screen moves the lower sash up and down by means of the sash operator. In this manner ample ventilation may be procured without endangering the safety of psychotic patients. The exterior fenestration is uniform and does not needlessly identify the location of this particular facility. Double hung windows in other wards are equipped with reversible hardware for convenience in washing.



COLTON
PIERREPOINT
CENTRAL SCHOOL

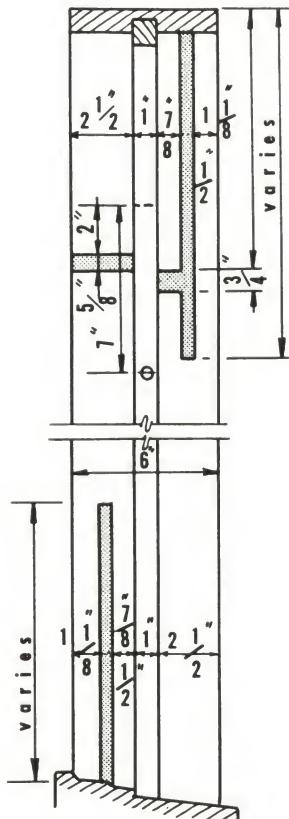


Architects:
Sargent, Webster, Crenshaw & Folley
Syracuse, New York

Typical Classroom
Colton-Pierrepont Central School
Colton, New York

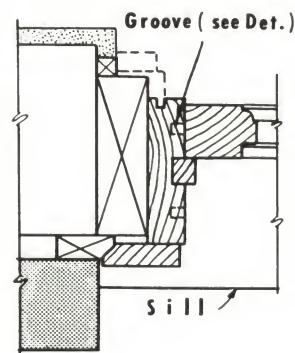


Specification Notes: Fabricated of Northern pine. All joints set in white lead. Hardware and interlocking metal weatherstripping installed at the site. Preservative applied to all wood surfaces cut on the job. Paint finish: primer applied at the mill, and three field coats of paint.



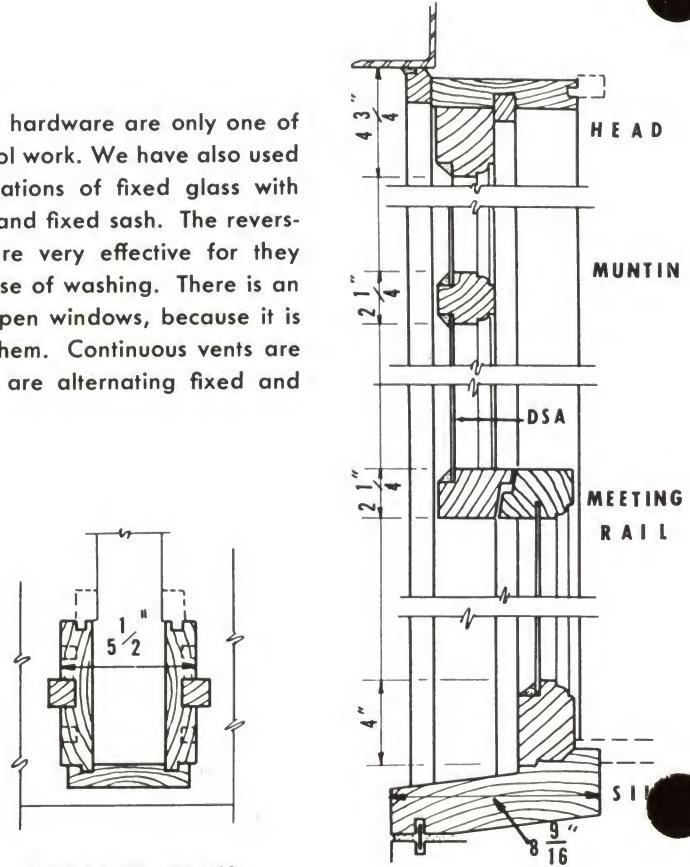
Comments by Architects:

"Wood windows equipped with austral hardware are only one of many types which we have used in school work. We have also used awning-type windows in ribbons, variations of fixed glass with hoppers and alternating rows of open and fixed sash. The reversible windows on the Colton school are very effective for they provide good ventilation, as well as ease of washing. There is an added safety feature inherent in the open windows, because it is impossible for a child to fall through them. Continuous vents are used only on the second floor. There are alternating fixed and operating sash on the first floor."



GROOVE DETAIL
for Austral Hardware

JAMB PLAN



MULLION PLAN

scale: $1\frac{1}{2}'' = 1' 0''$

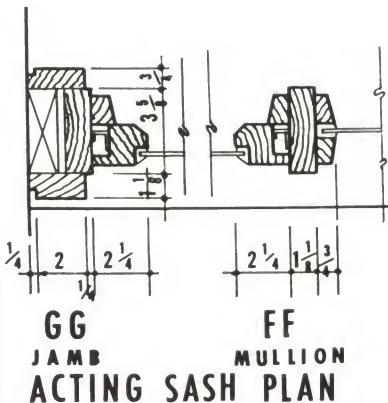
SECTION



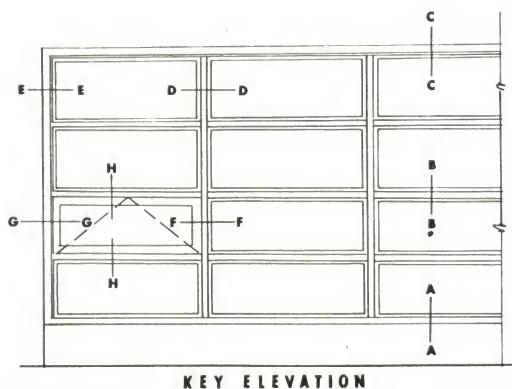
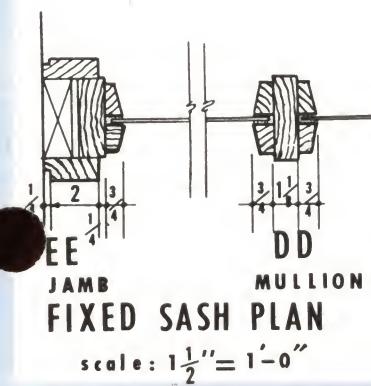
Specification Notes: All wood for frames is either sugar pine, C Select; or Idaho pine, Choice. Hopper windows are fitted with latches and appropriate hinges.

Comments by Architects:

These modular window details are very similar to those used for conventional masonry construction. The main difference is in the dimensioning of masonry openings. For example, where the nominal dimension of a masonry opening is

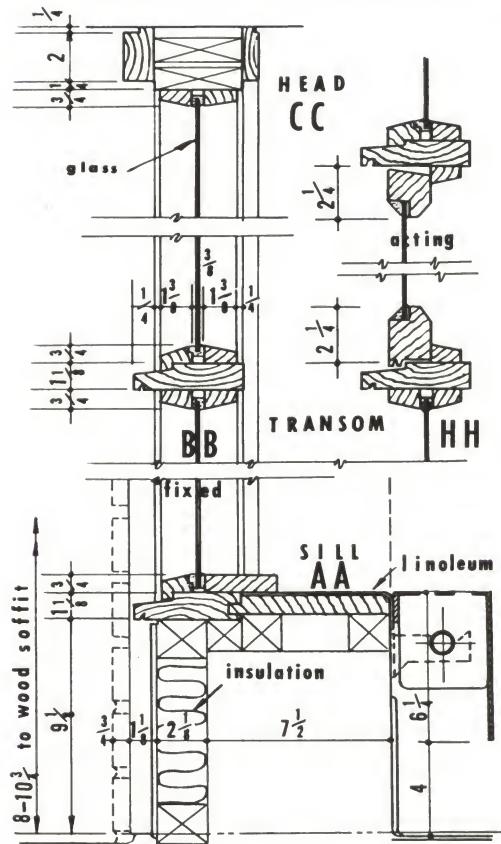


4'8", the actual dimension will be 4'-8 $\frac{3}{8}$ " when the brick joint is $\frac{3}{8}$ "; or 4'-8 $\frac{1}{2}$ " when the brick joint is $\frac{1}{2}$ ". On the details this is distinguished by the use of dots and arrows. In dimensioning to a grid line the arrow is used, and in dimensioning to an actual face of a material, the dot is used. Understanding this basic principle, the modular system becomes very simple not only in the drafting room but also in the shop and on the job."



**Main Entrance and its Interior
Maude Armatage Elementary School
Minneapolis, Minnesota**

Architects:
Magney-Tusler & Setter
Minneapolis, Minnesota
Perkins & Will, Associate Architects

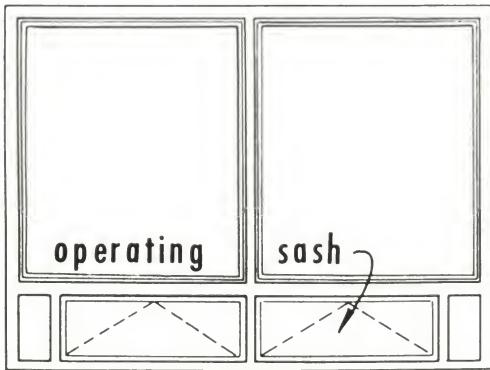


SECTION

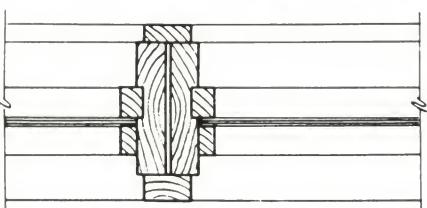


Music Office
Wheaton Community
High School (Addition)
Wheaton, Illinois

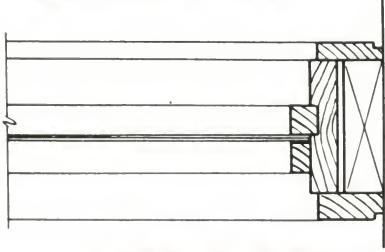
Architects:
Perkins & Will
Chicago, Illinois



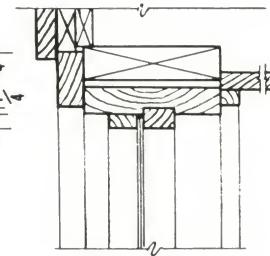
ELEVATION scale: $\frac{1}{4} = 1'-0"$



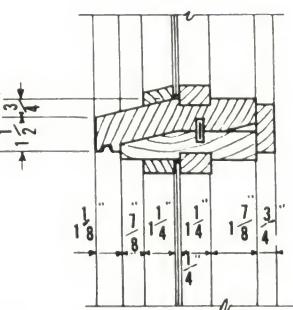
MULLION PLAN



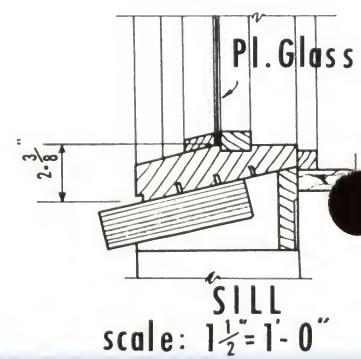
JAMB PLAN



HEAD



HOR. MULLION



scale: $1\frac{1}{2} = 1'-0"$

Specification Notes: Plank window frames constructed of "B and Better Select" spruce. All joints mortised, made up in lead paste and blind nailed. Sills saw kerfed and set with elastic caulking paste. Frames installed with two 12" steel anchors $\frac{1}{8}$ " x $1\frac{1}{4}$ " on each side at one-third points. Interior trim of soft wood. Paint finish: two coats colloidally dispersed paint over primer.

Comments by Architects:

"We prefer to detail wood window frames as simply as possible in accordance with the best practice. The same jamb detail is used throughout the building and is adapted for doors by merely removing the stops. The window frames will be painted white on the interior and exterior in order to lend an air of refinement, and to harmonize with the various color schemes of the individual rooms."

GRADE RECOMMENDATIONS FOR WINDOW FRAMES AND SASH

(Modified from "Lumber Grade-Use Guide")

Verify the availability of any one of these woods or others with an A.W.I. member in your area.

SOFTWOOD LUMBER

SPECIES	FRAMES		SASH	JURISDICTION
	Framed or Heavy Timbered Construction	Fireproofed Construction	All Types of Construction	Publishers of Grading Rules
Northern White Pine Eastern Spruce	No. 1 Common or D Select	No. 1 Common or D Select	No. 1 Common and Better	Northeastern Lumber Mfrs. Association
Tidewater Red Cypress	Clear Heart Faces, All Heart Sill	Clear Select Faces or Clear Faces, with Sill All Heart	Clear Heart or Clear	Southern Cypress Mfrs. Association
Southern Pine	B and Better or C Finish Grade	B and Better or C Finish Grade	Quality as specified	Southern Pine Inspection Bureau
Northern White Pine Norway Pine Eastern Spruce Western White Spruce	B and Better Select or C Select	B and Better Select or C Select	Usual shop grades	Northern Pine Manufacturers Association
California Redwood	Clear All Heart or A Grade (if wood preservative is specified)	Clear All Heart or A Grade (if wood preservative is specified)	Clear All Heart or A Grade (if wood preservative is specified)	California Redwood Association
White Fir Larch Douglas Fir (Inland Type) Ponderosa Pine	No. 1 and No. 2 Clear C Select C Select C Select B and Better or C Select No. 1 and 2 Clear or C Select Supreme-Choice D and Better Select D and Better Select	No. 1 and No. 2 Clear-C Select Clear-No. 1 Frame Clear-No. 1 Frame Clear or No. 1 Frame Clear or No. 1 Frame Clear Frame Clear Frame Clear Frame	Usual shop grades Usual shop grades Usual shop grades Usual shop grades Usual shop grades Usual shop grades Usual shop grades Quality as specified	Western Pine Association, including U.S.A., Alberta and Saskatchewan
Sugar (Genuine) White Pine Idaho (Genuine) White Pine Engelmann Spruce Lodgepole Pine				
Eastern Hemlock Tamarack Northern White Cedar	D and Better Finish, or No. 1 Boards	D and Better Finish, or No. 1 Boards	D and Better Finish	Northern Hemlock and Hardwood Mfrs. Association
Northern White Pine Norway Pine Eastern Spruce	B and Better Select or C Select	B and Better Select or C Select	Usual shop grades	
West Coast Hemlock Western Red Cedar Sitka Spruce Douglas Fir (Coast Region)	B and Better B and Better B and Better B and Better	B and Better B and Better B and Better B and Better	Quality as specified Quality specified Quality specified Quality specified	West Coast Lumbermen's Association, including U.S.A. and British Columbia

HARDWOOD LUMBER

The choice of hardwoods for exteriors should be governed by the architectural effects desired, by the cost and availability of the wood and the natural properties which make the wood best adapted to the intended use. For window frames and sash two such properties are essential. The wood must take and hold paint or other finishes well, and it must stay put when placed in use.

USE	KINDS OF HARDWOOD	GRADE OR QUALITY
Window Frames	Poplar, Birch, Ash, Cherry, Hard Maple, White Oak and Red Oak	Clear, or natural markings as indicated by design
Sash	As above	As above

SPECIFICATION DATA FOR NON-SWELLING PAINTABLE PRESERVATIVES

To Be Used for All Frames and Sash Manufactured from Soft Woods Containing Sap Wood

A substantial depth of treatment at all surfaces and in all joints will prevent decay. However, untreated wood beneath may be reached by fungus if the treated area is broken through by cutting or checking, or by the opening of poorly treated joints.

Therefore:

- (1) Exposure can be avoided by specifying that the sash be fitted to the frame in the wood-working plant, and that the sash and frame be treated after fitting,
- (2) Exposure can be avoided by specifying that the penetration of the preservative shall be deep enough to insure against exposure of untreated wood when the carpenter trims the frame or sash during installation.

Quality
Craftsmanship



★ ARCHITECTURAL WOODWORK INSTITUTE ★

SUGGESTIONS FOR SUPERINTENDENCE

- ✓ Window frames and sash should preferably be treated with a water repellent preservative prior to delivery at the site. Absence of a preservative makes it mandatory to prime all frames and sash immediately after arrival at the site, and prior to plastering.
- ✓ Windows should not be installed until the relative humidity has been reduced to at least 50%. This is especially true in cold weather when temporary heating produces high humidity, and causes water and frost to settle on the glass, soaking the wood parts of sash and frames.
- ✓ The ideal method is to close up the building, keeping out the weather but permitting ventilation. Install the window when all plastering has been completed and the building has dried out, ready for the trim.
- ✓ In painting the sash, paint should always extend over the putty and up about 1/32nd of an inch on the face of the glass. Putty will not permanently lay tight against the glass without a paint seal across the putty to glass joint. Once water gets between glass and putty, the joint may open up full length. Paint the joint in order to seal it.
- ✓ When cleaning windows for the first time, do not scrape the paint off too close to the putty joint. Glass should never be cleaned until the putty is thoroughly set.
- ✓ Use handles or lifts when raising or lowering sash. There is always a possibility of loosening the new putty around the glass in the event any other method is used.

When you specify wood windows, the owner gets:

- Minimum maintenance;
- Replacement parts readily made in a local woodwork plant;
- Easy adjustment of the window in the event of minor settlement;
- Frames that will not be subject to permanent distortion, by fire or otherwise.

NOTE OF ACKNOWLEDGMENTS

In the preparation of this brochure, the Architectural Woodwork Institute gratefully acknowledges the suggestions and cooperation of the various wood species associations mentioned herein, and of the architects and the industry members who submitted photographs and drawings. Extracts from "Lumber Grade-Use Guide" are published by courtesy of National Lumber Manufacturers Association. Technical material written and edited by James Arkin, A.I.A.

Photography

COVER: Zimmerman Residence: Carl Ullrich, Inc., courtesy of Libbey-Owens-Ford Glass Company.

Veterans Administration Hospital: Arteaga Photos.

Armatage Elementary School: Ver Keljik.

Colton Central School: Zalmanoff Studios.

Wheaton High School: Cliff E. Lohs.

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The library, known as the "Hogarth Room", in the Harris Hammond Residence at Bordentown, New Jersey, contains original paneling and carving by Chippendale. This room, and a Georgian dining room in the same residence, are among the finest examples of English paneling in America. Imported and installed about 1925. The wood is deal, or English pine, with an applied finish of wax. Architect for Residence: Marion Sims Wyeth, of Wyeth, King & Johnson, Palm Beach, Florida.

WALL PANELING

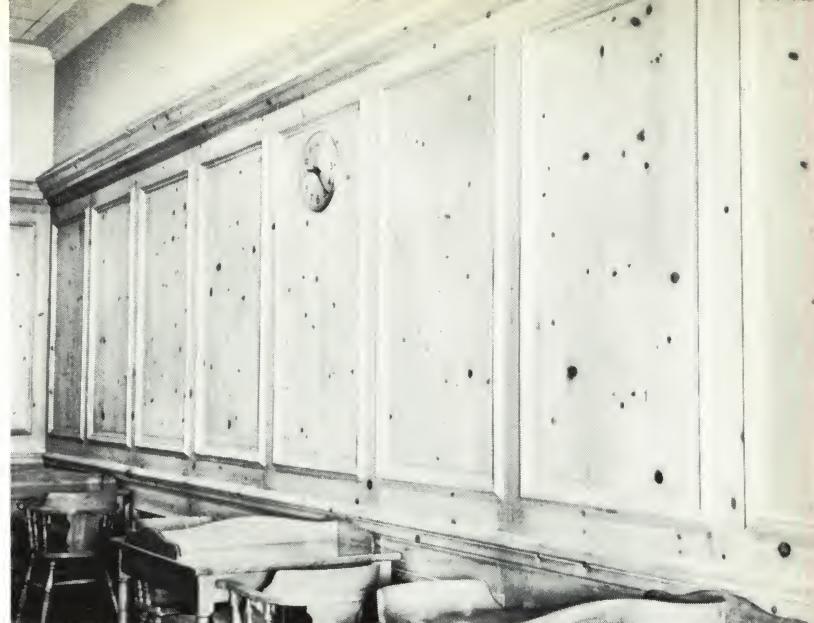
Wood paneling superseded tapestry as a finish material for the interior walls of the manors and palaces of Western Europe, whence design influence eventually reached colonial America. The great tradition of English woodwork as exemplified by the interiors of Christopher Wren, and the carvings of Grinling Gibbons, was based primarily on the extensive use of wall paneling. Many of these rooms can be seen today in the great museums, particularly in London. These installations are reminders that wood paneling is a mark of distinction for rooms which are intended to convey dignity and serenity. For any type of institution or residence, wood wall paneling offers these advantages:

- Design potential—opportunities to match and combine with other architectural woodwork in the room, and to color-blend with floors, furniture, upholstery and drapes.
- Texture and grain of true wood.
- Charm of figured patterns.
- Thermal insulation.
- High coefficient of acoustical absorption.
- Permanent decoration with low maintenance.
- Ease and economy of installation.

COVER: Members' Lounge, American Bar Center, Chicago, Illinois. Building dedicated August 19, 1954. Teak-wood wall paneling, consisting of 1/28" matched teak face veneer over a hardwood plywood core, used on walls and doors of this room and adjoining Board of Governors' conference room. All veneer from a single flitch. Back-primed; and finished with three coats of lacquer and two coats of wax, prior to installation. One additional coat of wax applied at the job.

Architects: Holabird and Root and Burgee, Chicago.

Rutherford Library
University of Alberta
Edmonton, Alberta



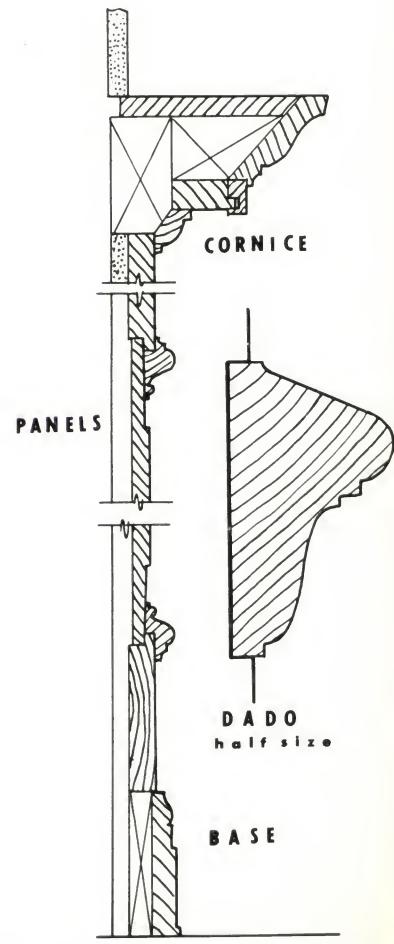
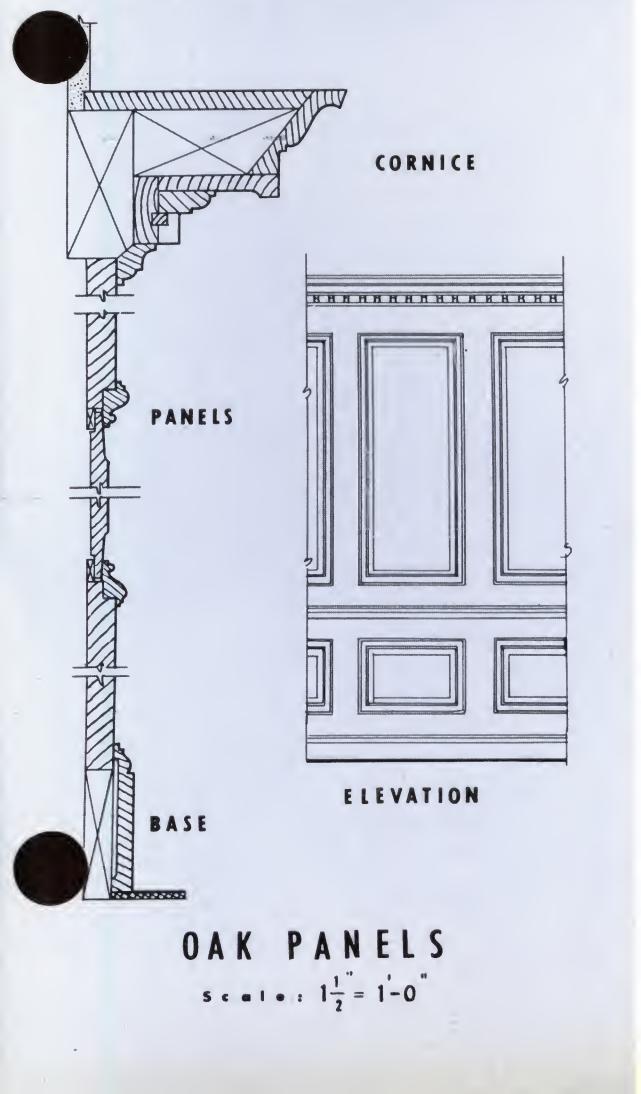
Rule, Wynn & Rule, Architects
Edmonton

Comments by Architects:

Over five carloads of wood were required to panel the new Rutherford Library which was opened in the Spring of 1951. All of the paneling was fabricated in a woodworking plant in prefit sections, from our designs.

Specification Notes:

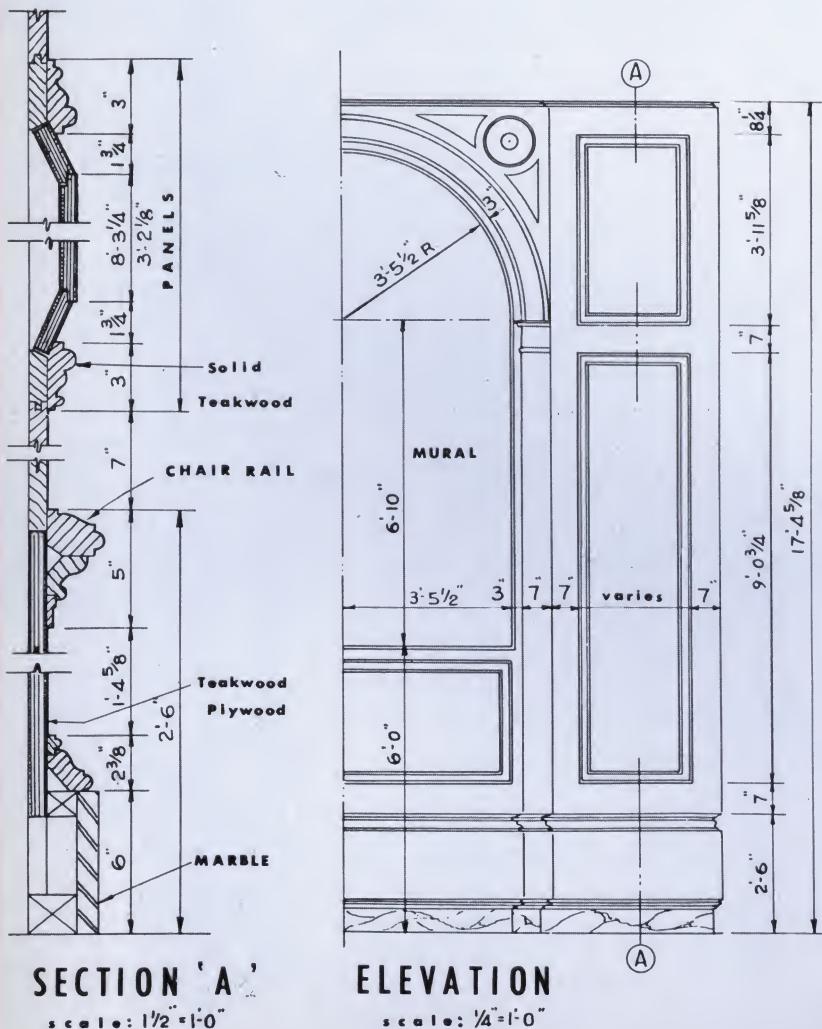
American quarter-sawn white oak was used for the larger rooms and corridors, American black walnut for the offices, and Knotty Pine (Idaho white pine) for the study rooms. All material is $\frac{3}{4}$ " solid wood, finished natural.





Industrial National Bank
Providence, Rhode Island

Howe, Prout & Ekman, Architects
Providence



Comments by Architects:

These large paneled rooms are in the Trust Department of the second oldest bank in America. This new addition to the bank was opened in 1951. The design of the paneling is in keeping with the Georgian facade, and the traditions of a conservative institution. The murals, by R. H. Ives Gammell, illustrate events in the history of Rhode Island prior to the founding of the bank in 1791.

Specification Notes:

Raised panels are all cut and mitered from one teakwood plywood panel to make raised and flat sections with same continuous figure. Plywood has lumber core with face veneers of teakwood. Panels are architectural grade, with selected flitches, book and sequence matched. All glue is waterproof. Matched rims and mouldings are of solid teakwood.



Directors' Suite
Boatmen's National Bank of St. Louis
St. Louis, Missouri

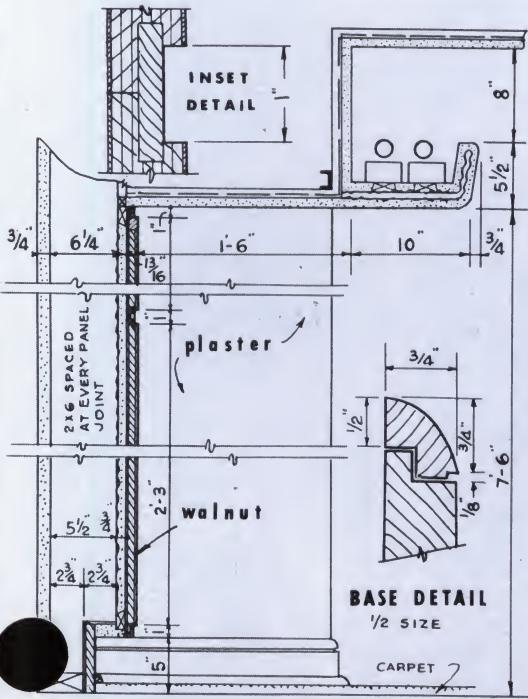
Wedemeyer & Hecker, Architects
St. Louis

Comments by Architects:

Three of the four walls surrounding the conference room are paneled of perfectly matched, polished walnut sheets, selected from the outer diameter of the same log used for the table top veneer. One of these walls, adjoining office space occupied by other lessees, is made up of three separate partitions; the outer 2" of metal lath and plaster; over that, 2" of cork; and finally, an interior partition of metal lath and plaster set in wood grounds to receive the walnut paneling. In this way the highest degree of sound proofing is obtained. Acoustics of the conference room are such that normal speaking tones at one end of the table can be distinctly heard at the other end.

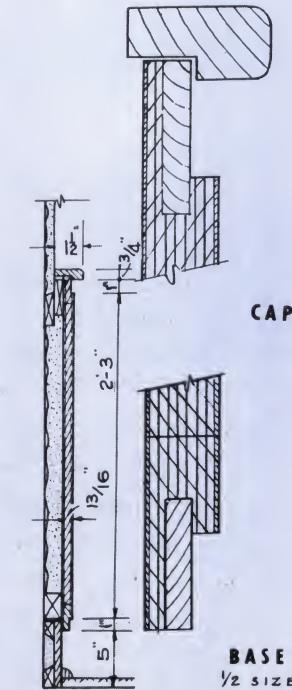
Specification Notes:

Veneer is dull-finish, cinnamon brown walnut taken from a single, huge log. Table top is set in a herringbone design made up of matched quarter-diameter sheets from the heart of the log. Walnut burls are inlaid at 34" intervals along the table top to mark the places of the Directors.



Wall Panel Details

scale : $3/4" = 1'-0"$



Wainscot Details

scale : $3/4" = 1'-0"$

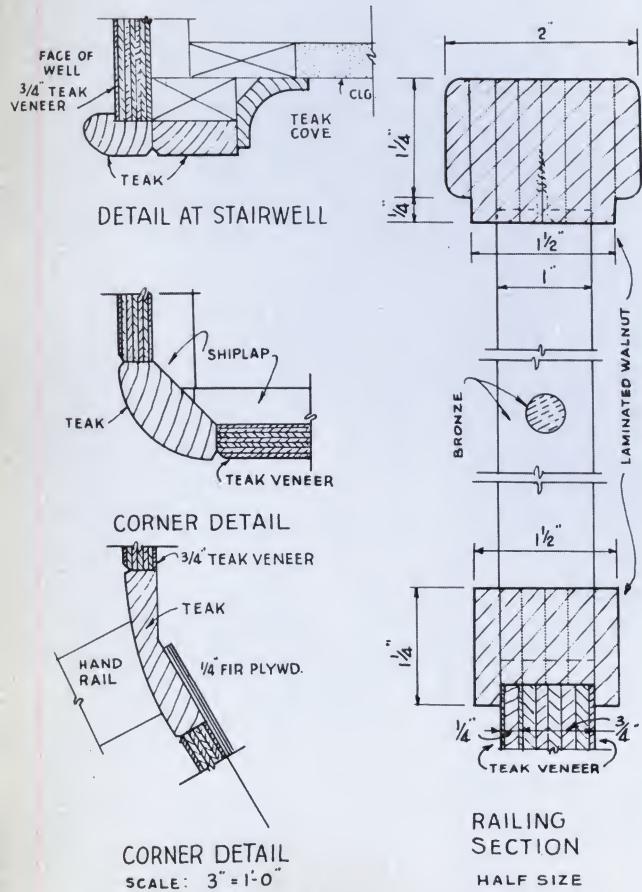
Den and Stair Hall
Residence of John Sigurdson
Vancouver, British Columbia



**Townley and Matheson, Architects
Vancouver**

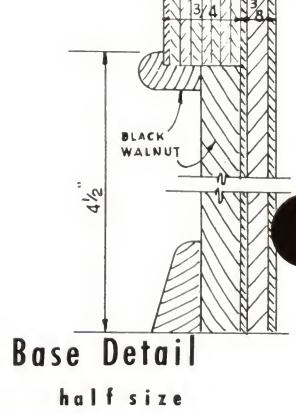
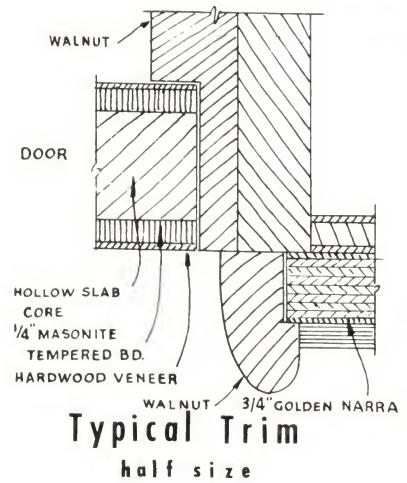
Comments by Architects:

Fenestration for the den is provided by a large semi-circular window, with book shelves on either side which can be seen in the mirror above the mantel. All walls in this room are paneled in golden narra, and all trim is solid black walnut. The doors are bent to radius, hollow slab, with a hardwood veneer applied to tempered masonite. The stair hall is paneled in teak and all trim is solid black walnut. Stair treads are oak and handrail is laminated black walnut.



Specification Notes:

All hardwood panels are $\frac{3}{4}$ " thick, made up of a seven ply cottonwood core with hardwood veneer both sides, face veneer matched. Panels are applied on $\frac{3}{8}$ " cedar veneer sheathing and splined together. Finish for golden narra: one coat clear paste filler, one coat clear shellac, three coats gloss varnish rubbed with pumice and oil. Finish for teak: one coat sealer, two coats liquid wax. Back primed to maintain stability.



Stair Details

Specification Data:

THE WOOD FOR PANELING

(Modified from "Lumber Grade-Use Guide")

The A.W.I. member who is furnishing this brochure can provide information on availability of these species.

SOLID HARDWOODS

The greatest volume of solid hardwood is surfaced to 25/32", and then sanded to 3/4". 1/2" material is sometimes used with standard species. 5/8" material is available, but seldom used. Widths for vertical paneling will vary occasionally, but for the most part the face widths will be 3/4" less than the nominal widths. The widths are random—from 4", 5", 6", etc., to a maximum of 10". As to hardwood paneling grades, there are, in general two—the custom or clear grade, and the character or natural marked grade. In natural marked paneling, the surface reflects the inherent beauty of the hardwood. Markings include knots, worm holes, burls, and other features of character.

A significant development in solid hardwood paneling is the increasing use of less than wall length pieces for vertical installation. The ends of the pieces are end matched, or butted, and may be eased or beveled to give a more distinct plank effect. Excellent examples of this paneling are to be seen in the exhibit entitled "A World of Hardwoods—Timber for Today and Tomorrow" at the Museum of Science and Industry, Chicago.

Species commonly used for wall paneling:

For Natural or Stained Finishes	For Painted Finishes *
Ash, White or Brown	Magnolia
Beech	Mahogany
Birch	Maple, Hard
Cottonwood	Maple, Soft
Gum, Black, qtd.	Oak, Red—plain and quarter sawn
Gum, Red	Oak, White—plain and quarter sawn
Butternut	Pecan
Cherry	Sycamore
Chestnut	Walnut
Elm	Willow
Hackberry	

* Species in this column are also subject to effective natural or stained finishes, depending on the character of the wood and the applied finish.

SOLID SOFTWOODS

Material for interior paneling may be had in species, grades, and thicknesses as specified by the architect, or as described in published grading rules for this type of material.

Solid interior paneling is divided into two general classes, (a) clear stock, and (b) stock especially selected for natural characteristics which enhance the beauty of the paneling. Examples of knotty stock are included in practically all of the pines, i.e., Northern white, Idaho white, Sugar, Ponderosa, Southern yellow, and Arkansas soft; hemlock, spruce, Douglas fir and redwood; architectural pecky or knotty cypress, and Western red cedar.

Clear stock is available in all of the above mentioned species, including cypress, California redwood, larch, incense cedar and white fir.

In describing the character of the stock wanted, drawings and specifications should cover, (1) thickness and width; (2) patterns, both working and joint details, if any; (3) approximate length, character, and frequency of knots or pecks desired; and (4) grain and other matching characteristics.

PLYWOOD

The A.W.I. member who is furnishing this brochure can provide detailed information on plywood and veneers.

Plywood may be obtained in both hardwoods and softwoods, in domestic and foreign varieties, in thicknesses from 1/8" to 1-1/16", veneer and/or lumber core. Lumber core always includes cross-bands and face veneers. Face veneers for wall paneling are usually 1/28" in thickness.

Hardwood plywood paneling is readily obtainable with sequence matched veneers. To insure uniformity of veneer and approval thereof prior to installation, specify "Architectural Grade". For better integration of wall design in a complete room, or suite of rooms, specify, "Architectural Matched Veneers".

The following Standards are applicable:

U. S. Commercial Hardwood Plywood CS 35-49
HPI Standard, in process: Custom; Select for color: Good, natural
finish (1)*; Sound (2)*; Utility (3)*; Backing (4)*. *(Corresponding CS grades).

Softwood plywood for paneling is described in the following U. S. Commercial Standards. Kind of plywood is designated by species of wood used for faces.

Douglas Fir Plywood.....	CS 45-48
Western Softwood Plywood.....	CS 122-49
Includes cedar (Alaska, Port Orford, and Western red), California redwood, Western (Idaho) white pine, Sitka spruce, Western larch, Western hemlock, Noble fir, and the commercial white firs.	
Ponderosa Pine and Sugar Pine Plywood.....	CS 157-49

To emphasize scale and proportion in a room—apply wall paneling that is horizontal, vertical, or non-directional



SUGGESTED DETAILS FOR HORIZONTAL FLUSH PANELING

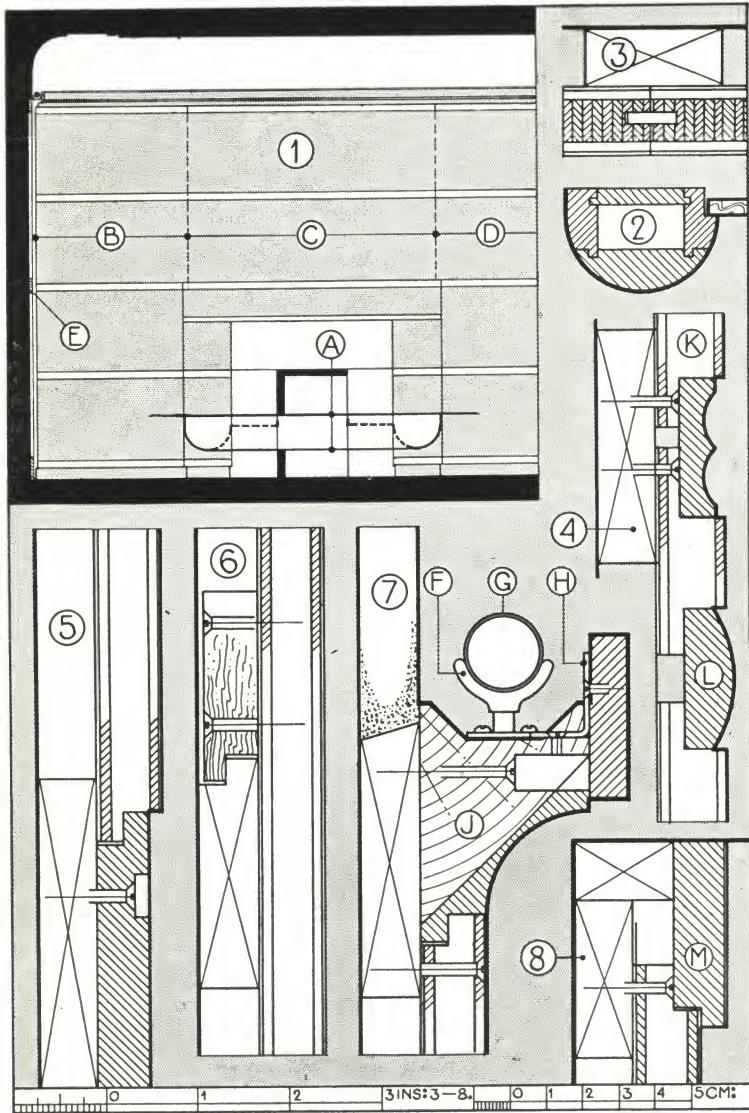


Fig. 1, B,C,D,: Paneling components on the fireplace side of a room. Vertical battens fixed in wall angles and behind jointed sections. Horizontal battens indicated in larger diagrams.

Fig. 1, A and Fig. 2: Frieze component and semi-circular verticals for fireplace, doweled together and glued on the bench. Fireplace is secret screwed to paneling sections.

Fig. 3: Tongue-jointing of Section C over fireplace. Both joints are glued and cramped up.

Fig. 4 K,L: Molded bands used for design, and to facilitate handling and fixing.

Fig. 5: Base, preferably solid wood, pellet-screwed to wall batten. Section B of paneling is then installed in a groove in the base.

Fig. 6: Detail showing Section B secured to horizontal wall batten (Fig. 1,E). Wall batten is grooved. Battens spaced about 15" apart are screwed in the paneling. Sections of paneling are screwed at top, at intervals of 15" to 18" under cross-band veneer; $\frac{1}{2}$ " strips of veneer are carefully removed, and later equivalent strips are glued in. Sections B and D are made 1 $\frac{1}{2}$ " wider to provide for secret screwing the fireplace in position, and Section C is made 1 $\frac{1}{2}$ " longer.

Fig. 7, F,G,H,J: Appropriate detail for cove lighting, showing capping, cradle fitting for fluorescent tubes, and metal brackets.

Fig. 8: Method of rebating and screwing the sections to wall battens when paneling runs from floor to ceiling. A veneered fillet (M) conceals screw-heads.

NOTE OF ACKNOWLEDGMENTS:

In the preparation of this brochure, the Architectural Woodwork Institute and its Member Companies gratefully acknowledge the suggestions and cooperation of architects and industry members who submitted photographs and drawings. Appreciation is expressed to The American Bar Association and to the University of Alberta for permission to publish photographs herein. Extracts from "Lumber Grade-Use Guide" are printed with the consent of National Lumber Manufacturers Association. Figures 1-8: Reproduced from "Modern Cabinet Work: Furniture and Fitments" by John Hooper, by courtesy of the author and the J. P. Lippincott Company of Philadelphia. Nomenclature preceding file number includes initials of Royal Architectural Institute of Canada, co-user of A.I.A. Standard Filing System.

Material written and edited by James Arkin, A.I.A.

Photography

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FOR ADDITIONAL INFORMATION, CALL OR WRITE:

Your local A.W.I. member listed on the card contained in the enclosed envelope

or

ARCHITECTURAL WOODWORK INSTITUTE
332 SOUTH MICHIGAN AVENUE • TELEPHONE WAbash 2-8855 • CHICAGO 4, ILLINOIS

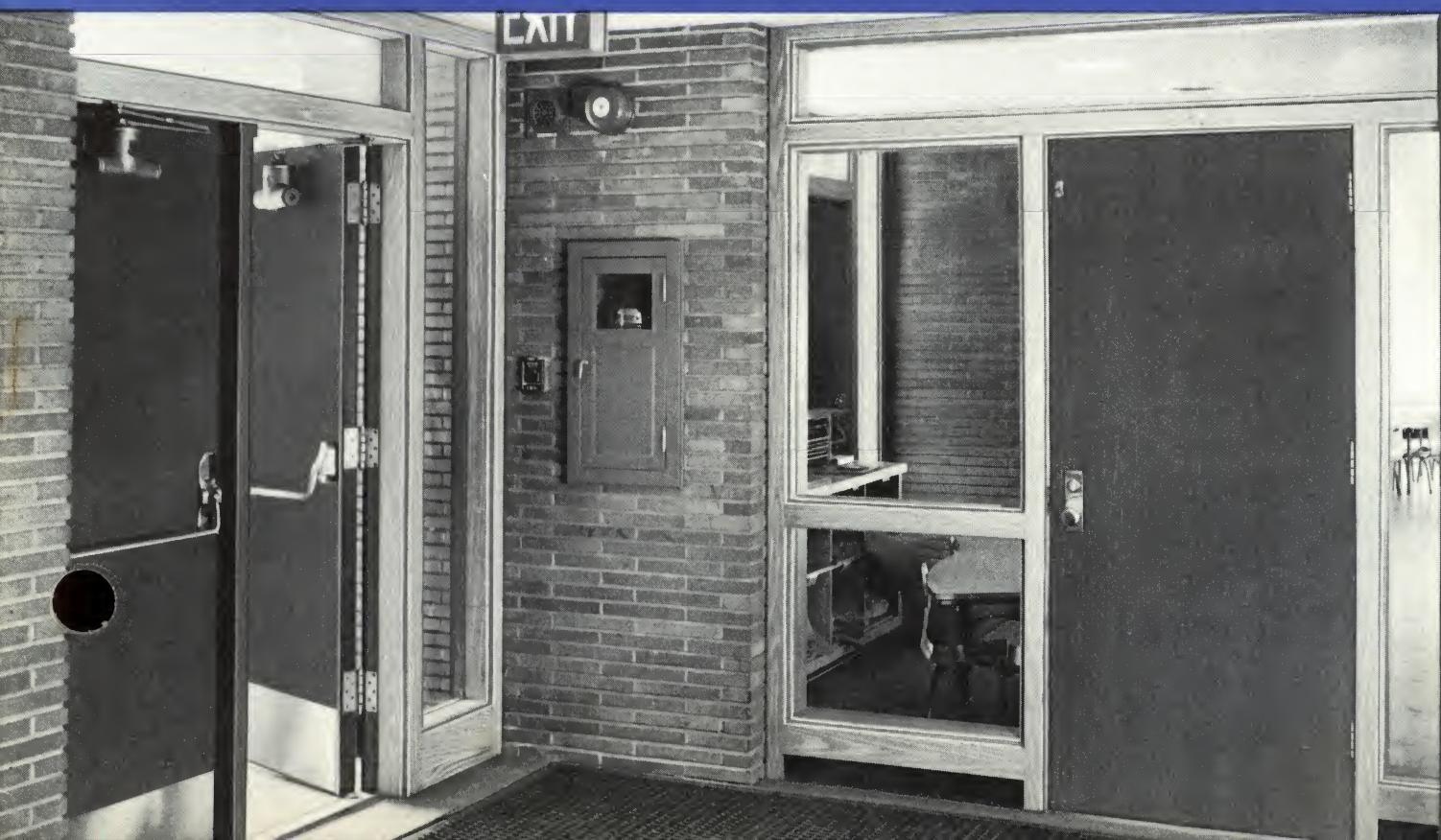
ARCHITECTURAL WOODWORK

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EXTERIOR
AND
INTERIOR
SOLID CORE
FLUSH DOORS

ARCHITECTURAL WOODWORK INSTITUTE



the versatile

SOLID CORE FLUSH DOOR

*for schools, hospitals, institutions, commercial buildings
and residences . . .*

- **Clean lines** to harmonize with contemporary design.
- **Warm, natural finish** that adds beauty and visual appeal to any building.
- **Mix or match** — can be painted for contrast with walls — or figure and texture of veneer can be specified to match adjacent wall paneling.
- **Natural properties** of sound insulation insure privacy.
- **Fire resistance** — Solid core flush doors will resist the passage of fire according to tests conducted by the U. S. Forest Products Laboratory. This is an added safety factor to cope with flash fires in institutional buildings. For Underwriters' Class "B" openings there are solid core flush doors with approved labels.
- **Special designs** — Solid core flush doors are easily fabricated for odd sized openings, for round, segment or special heads, or for glass opening cutouts, louvers or special requirements of the architects' design, including applied mouldings.
- **Exterior or Interior** — Identical appearance of exterior and interior doors is a valuable design feature for lobbies and corridors. Primary difference between the two doors is in the nature of the glue that is used. The natural thermal insulating properties of wood provides an ideal material for exterior doors.

There are NINE TYPES of solid core flush doors

To make it easier for the architect to specify the door that best serves his purpose, the A.W.I., and its member manufacturers, in collaboration with manufacturers of solid core flush doors, have published this brochure. It contains a description of internal construction, and a suggested specification for each type of door. This material has been compiled from the most authoritative sources to help the architect eliminate conflicts in millwork specifications, to promote accuracy, and to make it possible for architectural woodwork manufacturers to prepare the kind of estimates that reflect added savings for the job.

Architects are urged to prepare "open" specifications for doors by providing an "or approved equal" phrase

and by inserting a controlling clause for this procedure in the Supplementary General Conditions, or Instructions to Bidders, or both.

This is the first of a series of brochures on this particular subject. A forthcoming brochure will deal with the subject of hollow-core flush doors, stile and rail doors and other types.

FRONT COVER: Washington Elementary School, Evanston, Illinois, winner of an A.A.S.A. award, 1955. Architects: Perkins & Will, Chicago. Solid core flush doors at southwest entrance and in kindergarten. Exterior doors have Birch veneers. Frames and interior doors are of Red Oak in contrasting finishes. Photo: John W. Rosenthal.

**See your local member of Architectural Woodwork Institute
for information concerning the availability and cost
of these solid core flush doors**

**TYPE
A**

STANDARD SOLID CORE, 5 or 7-PLY DOOR

**Specified more frequently than any other type
for a wide variety of functions.**

CONSTRUCTION

Glued-Up Core:* The core of this door, often referred to as a slab or staved core, is formed by gluing up narrow pieces of low density kiln-dried wood blocks, not exceeding 2" in width. The core is fabricated with the grain running vertically, and the end joints in adjacent staves are well staggered. The core should be limited to a single species of wood throughout. An edge or banding strip $\frac{3}{4}$ " before trimming of the same species as the face veneer is glued to the sides of the core. It is standard practice with some manufacturers to use a 2-piece edge strip spliced vertically on the hinge edge of the door. The top and bottom of the door are similarly edged with a strip of hardwood or softwood at the manufacturer's option. When the top and bottom edge strips are omitted, the ends of the door are protected with two coats of paint or varnish by the manufacturer.

Floating Core:* The core of this door consists of vertical blocks and strips interspaced within a stile-and-rail frame and one or more intermediate rails. The filler blocks are laid loose in the frame, without glue.

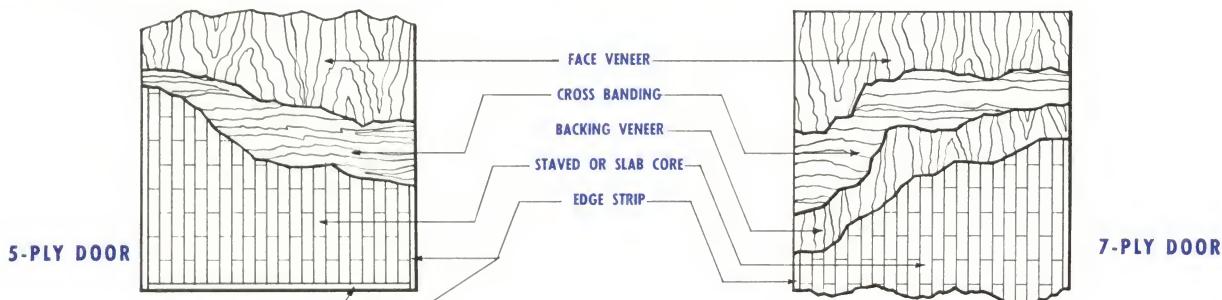
* There are two types of vertical staved core constructions in solid core doors: glued-up core and floating core.

Cross-Bandings: For a 5-ply door, a thoroughly kiln-dried hardwood cross-banding is then applied to the faces of the core. Cross-banding extends the full length and width of the door, and the grain is perpendicular to the grain in the core. Thicknesses vary from $1/10$ " to $1/16$ " according to the practices of the various manufacturers, and should be left to their option.

Face Veneer: Face veneer is next applied to the cross-banding, with the grain running at right angles thereto. Face veneers vary in thickness, from $1/20$ " to $1/28$ ", according to the wood species specified and manufacturers' practices.

As with cross-banding, it is important to permit the manufacturer to exercise his option in regard to thickness.

Panel Thickness For 7-Ply Door: A three-ply panel is applied to the face of the core. The total thickness of the face panel, made up of face veneer and cross-banding with its backing, should be not less than $1/8$ " before sanding.



SUGGESTED SPECIFICATIONS

"All doors shall be solid core construction manufactured with glued-up core, floating core.....(Specify one) of low density core wood of 2" maximum width, with standard thickness hardwood cross-banding, and with face veneers not less than $1/28$ " thick. Side edge strips shall be $3/4$ " thick before trimming and shall match face

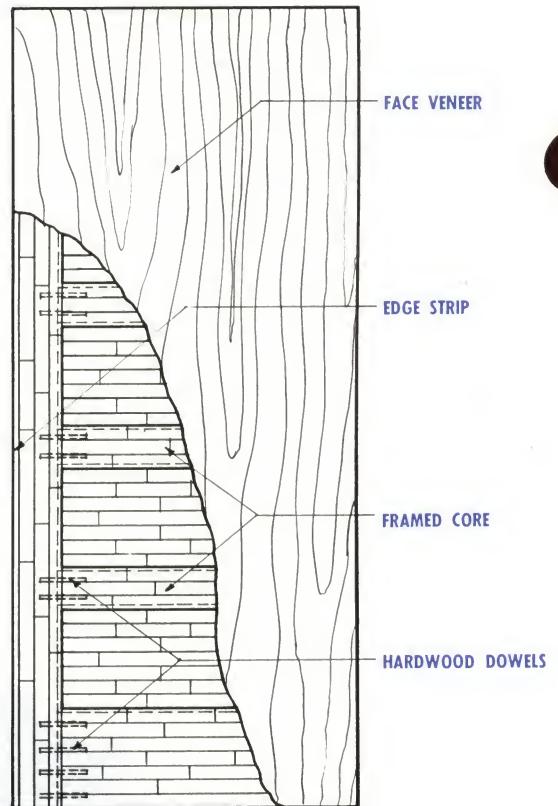
veneers. Top and bottom edge strips shall be of hardwood or softwood, or according to manufacturer's standards. Specie of face veneer shall be..... Doors shall be manufactured in accordance with the description under heading 'Type A' construction contained in A.W.I. Brochure No. 5."

TYPE B

FLUSH FRAMED CORE, 3-PLY DOOR

This type of flush door is different from Type "A" in two respects:

- 1 It utilizes a framed core instead of a vertical staved core.
- 2 Because of the framed core, the cross-banding is omitted and a heavy face veneer, usually standard $\frac{1}{4}''$ * thick, is applied directly to the core.



CONSTRUCTION

Core: Although the several manufacturers of this type of flush door have their own individual methods for assembling the framed cores, core construction is essentially similar. The core material is formed with small blocks as are used for the Type "A" door, and the core is assembled with vertical stiles, horizontal rails (dowelled together), and flush panels which are tenoned to the stiles and rails. A full length edge strip, to match the face veneers, is applied to the outside edges of the stiles.

Face Veneer: A standard $\frac{1}{4}''$ * sawn veneer is applied directly to the core. This face veneer is sawn from lumber and therefore the species selection is generally limited to the following woods:

plain red oak—(Rift red oak, plain white oak, rift white oak and quartered white oak are not available in $\frac{1}{4}''$ * sawn veneer)
natural birch—(Selected for red or white color—not available)
natural maple—(Selected for white color—not available)
natural gum
poplar
mahogany
pine

SUGGESTED SPECIFICATIONS

"All doors shall be 3-ply construction with stile, rail, and panel framed cores, and with standard $\frac{1}{4}''$ * sawn face veneers. Specie of face veneer shall be Doors shall be manufactured in accordance with the description under the heading 'Type B' construction contained in A.W.I. Brochure No. 5."

* For $1\frac{3}{8}$ " thickness doors, standard $\frac{1}{8}$ " thickness sawn face veneers are used.

**TYPE
C**

STANDARD SOLID CORE, 5-PLY DOOR with face veneers $\frac{1}{8}$ " or $\frac{1}{4}$ " thick

This Type recognizes the need for a door combining a thick face veneer with the relative economy of a stave or slab core.

CONSTRUCTION

Core: Identical to Type "A" glued-up core door.

Cross-Banding: Identical to Type "A" 5-ply door.

Face Veneer: Utilizes a sawn veneer of standard $\frac{1}{8}$ " or $\frac{1}{4}$ " thickness. Because these are sawn veneers, the species are limited to the selection described under "Face Veneer" for Type "B" door.

SUGGESTED SPECIFICATIONS

"All doors shall be of 5-ply solid core construction manufactured with vertical staved cores glued up of thoroughly kiln-dried, low density corewood, with hardwood horizontal cross-bandings. Side edge strips shall be $\frac{3}{4}$ " thick before trimming and shall match face veneers. Top and bottom edge strips shall be of hardwood or softwood, or according to the manufacturer's standard. Face veneer shall be standard ($\frac{1}{8}$ ") ($\frac{1}{4}$ ") thick. Specie of face veneer shall be Doors shall be manufactured in accordance with the description under heading 'Type C' construction contained in A.W.I. Brochure No. 5."

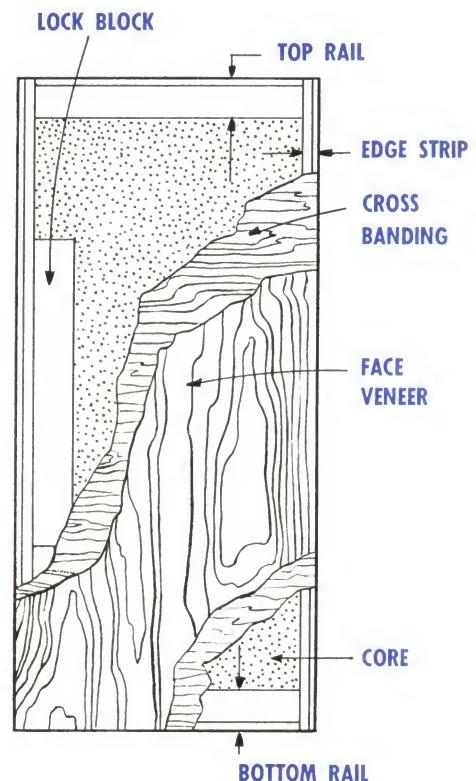
**TYPE
D**

FLUSH MINERAL CORE DOOR

This type is similar to Type "A" door, with the single exception that a core of mineral composition material is used in lieu of the slab or stave wood core. The mineral core is railed, or edged, with $1\frac{3}{8}$ " side edge bands to match face veneers, and with $4\frac{3}{8}$ " hardwood rails at the top and bottom. A wood lock block is also built into the core on either side of the door of adequate size to accommodate appropriate hardware. This door is available in any face veneer of not less than $1/28$ " thickness. All doors are adaptable for light and louver openings in accordance with the manufacturer's standard details.

SUGGESTED SPECIFICATIONS

"All doors, as indicated in the schedules, shall be flush veneered doors with mineral composition cores, with hardwood horizontal cross-bandings. Side edge strips shall be $\frac{3}{4}$ " thick before trimming and shall match face veneers. Top and bottom edge strips shall be of hardwood or softwood, or according to the manufacturer's standard. Specie of wood for face veneer shall be Doors shall be manufactured in accordance with the description under heading 'Type D' construction contained in A.W.I. Brochure No. 5."



TYPE E

FLUSH "B" LABELED WOOD FIRE DOORS

At the present time there are two manufacturers producing wood faced fire doors which bear the "Underwriters'" label for Class "B" and Class "C" openings in walls and partitions. The openings are based on classifications established by the National Board of Fire Underwriters. The use of the "B" label on these doors involves certain limitations which must be consistent with "Underwriters'" standards, with regard to function and method of installation.

1. Maximum permissible door size is 4'0" x 7'0" x 1 3/4". (No pairs allowed.)
2. Glass openings must not exceed 100 square inches. These openings have been standardized at 8" x 12" or 10" x 10", and the glass must be installed in an "Underwriters'" approved metal surround. The surround will be furnished with the door.
3. Maximum clearances have been established at 1/16" at the sides and top, and 3/16" at the bottom.
4. The doors must be set in approved "B" label metal frames which are not furnished with the doors.
5. Hardware used in conjunction with these doors must comply with "Underwriters'" standards. (Hardware is not furnished with the doors.) Specific information regarding hardware is available in the latest edition of "Fire Protection Equipment List" published by Underwriters' Laboratories, Inc., 207 East Ohio Street, Chicago 11, Illinois.

CONSTRUCTION

The doors are 1 3/4" thick with an incombustible mineral or asbestos-type core, railed or edged on four sides with solid birch (only specie available), treated with Class "A" fire-proofing agent. To this is applied a standard thickness horizontal cross-banding and vertical grained face veneer, or a 3-ply panel using standard thickness face veneer. Thus, the fire doors can be matched perfectly with other wood faced doors nearby and still maintain the essential fire protection.

SUGGESTED SPECIFICATIONS

"All doors required to maintain a "B" or "C" fire hazard classification shall be approved "B" labeled fire doors and shall be labeled accordingly. Specie of wood for face veneer shall be.....
Doors shall be manufactured in accordance with the description under heading 'Type E' construction contained in A.W.I. Brochure No. 5."



FIRE RESISTANT WOOD CORE DOORS

Although a relative degree of fire resistance is inherent in the construction of all solid wood core flush doors, several manufacturers make doors which are specially treated to be fire resistant. Under certain conditions, and in various localities, depending on code requirements, these doors are permissible for openings in partitions designed to prevent the spread of fire through buildings.

CONSTRUCTION

Internal construction is similar to Type "A" 5-ply glued-up core door, except that the core, cross-banding and edge strips are chemically impregnated to render the doors virtually non-inflammable and highly resistant to flame penetration. The doors are available with any of the standard thickness face veneers.

SUGGESTED SPECIFICATIONS

"Fire resistant doors shall be of standard solid core 5-ply construction, similar to Type "A" of A.W.I., except that the core, cross-banding and edge strips shall be impregnated with chemicals to enable the doors to pass a one-hour fire exposure test, conforming to tests already conducted by Forest Products Laboratories, Madison, Wisconsin, which closely followed the procedure stipulated in "Standard Specifications for Fire Tests of Building Materials" published by A.S.T.M., or equivalent tests conducted by a recognized laboratory. Specie for face veneer shall be Doors shall be manufactured in accordance with the description under heading 'Type F' construction contained in A.W.I. Brochure No. 5."



SOUND INSULATING DOORS

This door is produced by a single manufacturer to conform to three sound reduction ratings to meet a wide range of acoustical needs as follows:

1. A 1 3/4" thick door for use where the partition is of no greater acoustical insulation than 35 decibels.
2. A 2 1/2" thick door giving a measured average reduction of 40 decibels.
3. A 3" thick door giving a measured average reduction of 43 decibels, for use where the highest obtainable reduction of sound is essential.

CONSTRUCTION

The two barrier faces of this door are separated by an unfilled air space that prevents opposite surfaces from vibrating in unison. The acoustical panel thus constructed is framed with veneered stiles and rails. Doors are available in all types of veneers.

SUGGESTED SPECIFICATIONS

"Sound insulating doors as indicated on the plans shall provide a sound reduction of decibels, as certified by laboratory test. Doors are to be furnished by the door manufacturer complete with special stops, stop adjusters, gaskets and automatic threshold sealing device. Specie of wood for face veneer shall be Doors shall be manufactured in accordance with the description under heading 'Type G' construction contained in A.W.I. Brochure No. 5."

**TYPE
H**

X-RAY OR LEAD LINED DOORS

X-ray laboratories, particularly in hospitals, require lead lined doors to prevent leakage of the rays. This requirement demands a lead lined door in which the lead sheeting is complete from edge to edge of the door. In other respects, the door is identical to the standard solid core door described under Type "A". An X-ray door in wood has the advantage that it can be veneered to match regular solid core flush doors in the corridors and adjacent laboratories.

X-ray doors are manufactured only on special order. Any thickness of lead may be specified according to the amount of protection required. Contractual obligations can be clarified if it is definitely stated in the specifications whether X-ray doors are to be included in the contract for Architectural Woodwork or the contract for X-ray Equipment.

SUGGESTED SPECIFICATIONS

"X-ray doors shall house a continuous sheet or sheets of lead running full to the four edges of the door. Standard thickness cross-bands and face veneers shall be applied to the wood core. Vertical edge strips shall be of same species as face veneer. Total lead thickness shall be", or as indicated on plans. Specie of wood for face veneer shall be Doors shall be manufactured in accordance with 'Type H' construction contained in A.W.I. Brochure No. 5."

**TYPE
I**

GROUNDED DOORS

Grounded doors meet another need for hospitals, laboratories and industry. These doors, fitted with built-in copper wires grounded to hinges and lock, reduce the danger of flash fires or explosions from static spark in operating rooms, laboratories handling highly volatile fluids and explosive gases, and in oil and hydro carbon refineries. The doors are manufactured to special order and architects are advised to call their local member of the Architectural Woodwork Institute for detailed information.

General Information

PERTAINING TO ALL TYPES OF SOLID CORE FLUSH DOORS

louvers and lights

If louvers are required it is essential to specify whether they are wood or metal. If they are metal, specify whether they are to be furnished by the architectural woodwork manufacturer or some other trade.

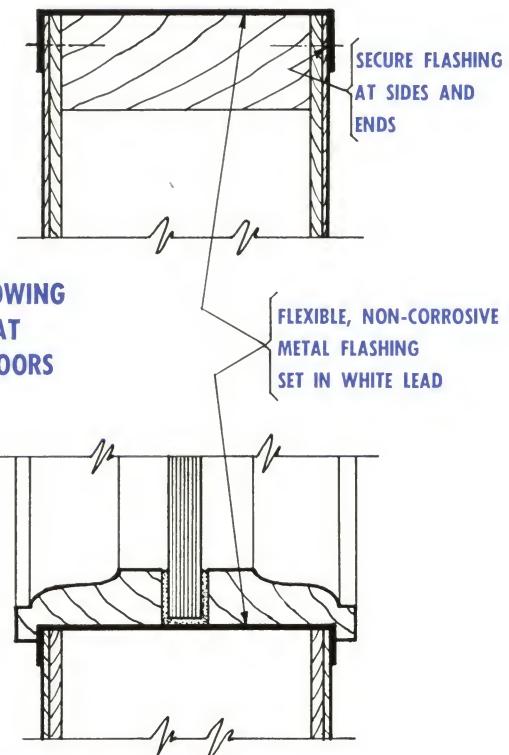
1. *Wood Louvers:* When wood louvers are specified, a considerable saving can be effected by permitting the door manufacturer to use his standard louver, because each manufacturer has his own designs for the construction of louvers, for which he stocks the necessary parts. It is recommended, therefore, that the actual details be left to the manufacturer, unless a very special architectural effect is desired.
2. *Metal Louvers:* If metal louvers are to be installed, the architect should indicate on his drawings or in his specifications whether wood beads will be required to hold the louver in place and if so, whether the beads will be required on one side or both sides of the door. Normally, the door manufacturer will furnish his standard bead for this purpose, unless the architect provides a full size section on the door schedule.
3. *Mouldings for Lights:* Similar to the procedure with louvers, each manufacturer has certain standard glass mouldings which he prefers to use, unless a full size section is provided by the architect. If a custom design is preferred, it is recommended that a section be given in the door schedule, or on the drawings.

special hardware

The installation of finish hardware in flush doors with solid wood cores presents no problems whatsoever. Various kinds of hardware may be specified by the architect with the assurance that the hardware can be installed in a rigid manner that will not affect the utility or stability of the door. Overhead concealed closers are not recommended for doors with $\frac{1}{4}$ " face veneers. It is recognized that a tolerance of minus $1/16$ " from the specified thickness of the door is permitted, and due consideration should be given to this fact when specifying hardware.

flashing of exterior doors

It is recommended that all exterior doors be flashed at the top of the door, and at the bottom of glass opening.



DETAIL SHOWING FLASHING AT BOTTOM OF GLASS OPENING

When installing lights of glass in exterior doors, it is extremely important that the glass will be well bedded in putty both inside and out to eliminate water seepage behind the glass mouldings due to condensation and exposure to weather.

weatherstripping

It is extremely important that all weatherstripping installed at the job site be set in white lead by the subcontractor for Weatherstripping; and that all fresh cuts made incidental to this installation be well painted or spar varnished to prevent moisture absorption.

Care of doors TO INSURE MAXIMUM SERVICE AND SATISFACTION

The proper care of wood doors at the job site has always presented innumerable problems. The extreme care and precision workmanship that is used in manufacturing doors is often nullified by improper and careless treatment on the job. Therefore the following recommendations are pertinent:

- 1.** Doors must be stored or hung only in dry, well ventilated buildings and never in damp, moist or freshly plastered areas.
- 2.** If doors are not painted or finished prior to delivery to the job site, they should be painted or finished on both sides and on all four edges immediately upon arrival.
- 3.** After the doors have been fitted, it is imperative that the top and bottom edges receive two coats of paint, varnish or sealer by the painting contractor.
- 4.** The fact that all flush doors are carefully belt-sanded before shipment by the manufacturer should not be construed as meaning that the doors have received final preparation for the application of paint or natural finish. Architectural specifications should contain a provision whereby the appropriate contractors at the job site are notified that the doors shall be inspected, retouched, hand cleaned and spot sanded as may be necessary to remove any soiled or abrasion spots, due to handling, immediately prior to application of paint or natural finish.

Careful observance of these recommendations will protect the Owner's investment and help immeasurably to retain the natural beauty of wood doors.

G U A R A N T E E S

The Architectural Woodwork Institute subscribes to the National Woodwork Manufacturers Association standard door guarantee. All reputable door manufacturers guarantee their products against manufacturing defects, but there is no door manufacturer who can or will guarantee his door against all of the hazards of mishandling that can occur between the time that the door is manufactured and placed in operation.

Species of woods available

FOR STANDARD THICKNESS FACE VENEERS

This list is not all inclusive, but it is intended as a guide to those species most commonly used and readily available. Note that there are thickness variations in some veneers. It is suggested that the precise veneer thickness be left to the manufacturer's option since he maintains large stocks of veneers, and his own production methods are based on these predetermined thicknesses. Veneer thicknesses shown are actual thicknesses before sanding.

BIRCH

1/20" to 1/28" Rotary Cut

Paint Grade—Sound, but unmatched for color or grain.

Natural Birch—Selected for quality but not for color.

Selected White—Selected from sapwood of Yellow Birch.

Selected Red—Selected from heartwood of Yellow Birch.

1/20" to 1/28" Sliced

Natural Birch—Selected for quality but not for color.

Selected White—Selected from sapwood of Yellow Birch.

Selected Red—Selected from heartwood of Yellow Birch.

In very short supply.
Procurable only in relatively narrow pieces.

1/8" and 1/4" Sawn Natural Birch

NOTE: It is very important for specification writers to bear in mind that the Yellow Birch tree is the actual tree from which Birch is commercially obtained, and that "Natural Birch" (meaning red and white color are both allowed in the same piece); "Selected Red" (the heartwood of the Yellow Birch tree); and "Selected White" (the sapwood of the Yellow Birch tree), all come from the same log. Birch may be specified in only 3 ways: (a) Natural (b) Selected Red (c) Selected White. Any other description such as "Unselect Red Birch" will be ambiguous, misleading and subject to misinterpretation.

For many years the word "unselect" has been used by plywood, door, and lumber manufacturers, in connection with Birch and Maple, to mean "not selected for red or white color". This is an inappropriate word to use because the word "select", in lumber terminology, means graded with respect to knots, decay, bark and other defects having nothing to do with color. In the past few years the inexact use of the word "unselect" has gradually been superseded by the word "natural", a much more descriptive term.

RED OAK—Very readily available. Uniform in color. Economical. Solid Red Oak for trim is also readily available to match Red Oak doors.

1/20", 1/24" Rotary Cut

Extreme grain figure.

1/20", 1/24" Plain Sliced. Less figure than rotary cut. More closely approximates solid lumber grain.

1/28" Rift Sliced (Frequently referred to as Comb Grain)

1/8" and 1/4" Sawn—(Similar in figure to Sliced)

PHILIPPINE HARDWOOD (Light Red and Dark Red)

A group of hardwoods of which red and white lauan and tanguile are best known. These woods are sold in this country as "Philippine Mahogany" although they are not related to genuine Mahogany in any way.

1/20" to 1/28" Plain Sliced. (Seldom available).

1/20" to 1/28" Quartered Sliced.

1/20" to 1/28" Ribbon Stripe *

* Ribbon Stripe is a selection of quartered sliced for extreme straightness of grain.

GENUINE MAHOGANY — Tropical American or African

1/20" to 1/28" Flat Cut or Plain Sliced

1/20" to 1/28" Quartered Sliced

1/20" to 1/28" Ribbon Stripe *

* Ribbon Stripe is a selection of quartered sliced, for extreme straightness of grain.

1/8" and 1/4" Sawn

WHITE OAK

1/20", 1/24" Plain Sliced

1/28" Rift Sliced (Frequently referred to as Comb Grain.)

HARD MAPLE

1/20" to 1/28" Rotary Cut

Natural Maple—Selected for quality, but not for color.

Selected White—Selected from sapwood of Hard Maple.

1/20" to 1/28" Plain Sliced Natural Maple

1/8" and 1/4" Sawn Natural Maple

Natural Maple—Selected for quality but not for color—includes mineral streaks as no defect.

The wood is heavy, hard, and strong, with a uniform texture; and offers excellent resistance to abrasion or indentation. Sapwood of Hard Maple is white with a slightly reddish-brown tinge, while the heartwood is a light reddish-brown. Natural Hard Maple exhibits both of these colors, but Selected White Maple is limited to sapwood.

WALNUT

1/28" Plain Sliced

1/28" Quartered Sliced

GUM

1/20" to 1/28" Rotary Cut

Natural Gum — Contains both reddish-brown heartwood as well as sapwood which is off-white in color.

Selected Red Gum—Selected from heartwood of Red Gum tree.

Selected White Gum—Selected from the sapwood of Tupelo or Sweet Gum tree.

1/8" and 1/4" Sawn Natural Gum

PINE—NORTHERN AND PONDEROSA

1/16", 1/20" Rotary Cut

1/8" and 1/4" Sawn.



COMPARATIVE COST DATA

The membership of the Architectural Woodwork Institute recognizes the great desirability of putting into architects' hands comparative information concerning costs as follows:

- A. *Different veneers on the same type of door,*
- B. *As between different types of doors.*

Due to tremendous variations existing in the United States and Canada on account of freight differentials, availability of species, location of manufacturers, and prevailing area practices, the A.W.I. finds it impractical to present comparative cost data on a continent-wide basis.

A.W.I.

NOTE OF ACKNOWLEDGMENTS

The Architectural Woodwork Institute and its Member Companies gratefully acknowledge the valuable suggestions and wholehearted cooperation of various industry members, door manufacturers and veneer manufacturers in the preparation of this brochure. Editorial Consultant: James Arkin, A.I.A.

PRODUCED BY A.W.I. TECHNICAL COMMITTEE ON DOORS

Based in Part on the Door Manual Published by the Hoe Corp., Poughkeepsie, N. Y.

FOR ADDITIONAL INFORMATION, CALL OR WRITE:

Your local A.W.I. member listed on the card contained in the enclosed envelope

or

ARCHITECTURAL WOODWORK INSTITUTE
332 SOUTH MICHIGAN AVENUE • TELEPHONE WAbash 2-8855 • CHICAGO 4, ILLINOIS

ARCHITECTURAL WOODWORK

1 9 5 5



CABINET
CONSTRUCTION
DATA

ARCHITECTURAL WOODWORK INSTITUTE



Only custom designed cabinet

complete freedom of expression

**YOUR CLIENT GETS CABINETS FITTED TO A BUILDING—
NOT A BUILDING PLANNED AROUND CABINETS**

and you get all these added exclusive features:



ADAPTABILITY OF DIMENSIONS

The flexible dimensions of custom designed cabinet work and casework can be readily adapted to all job conditions and to the intricacies of mechanical equipment. You are free to design cabinets for any module that may be established for the building.

UNRESTRICTED CHOICE OF WOOD AND FINISH

You can match or harmonize the wood and finish with adjacent woodwork; or you can paint the cabinet work to conform to the decor of the room. Make your selection of wood from a wide range of species that will be most adaptable to the function of the cabinet, and to the applied finish.

ECONOMY OF CONSTRUCTION

You can save by selecting a wood species in accordance with local market conditions, and not on the basis of a catalog number. Call your area member of A.W.I. to determine the most economic wood to specify at a given time for a particular job. He can save additional funds for your job by assisting in preparing accurate shop drawings in his own mill near your office and the job-site, in a convenient manner that will meet your approval.

CONTROLLED STABILITY

Stability is built into your custom designed cabinets in the form of kiln-dried lumber of known moisture content from automatically controlled kilns. Your local A.W.I. member can watch job progress and make certain the woodwork is delivered only after the building is dry.

DURABILITY

The grade or quality of custom designed cabinets is a matter for the architect to decide in accordance with the building budget. The various components of cabinet work can be machined and assembled by several methods, dependent on the quality that is desired. Relative costs will be furnished by your area member of A.W.I. Regardless of the quality you select, the assembled cabinet will be durable and of superior construction.

ADVANCED GLUING TECHNIQUES

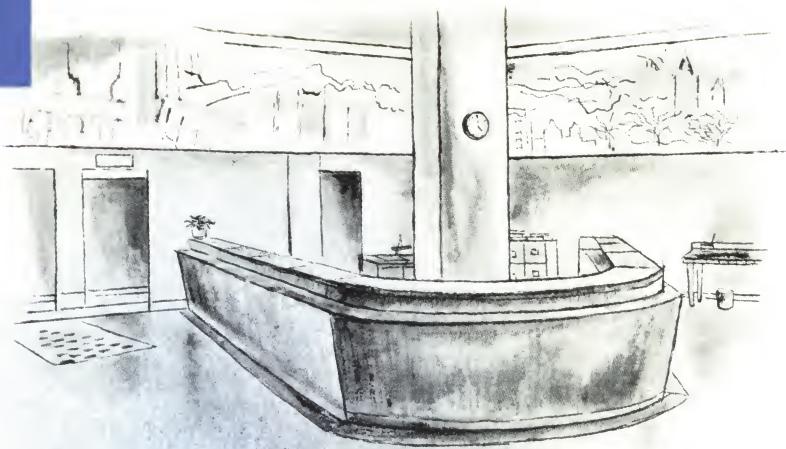
The most modern adhesives and electronic bonding processes are available to and used by many architectural woodwork manufacturers. Depending on the type of construction, nails may be eliminated to a large degree.



work gives you

YOUR CHOICE OF HARDWARE

The kind of hardware that your design actually requires may be specified for installation in custom designed cabinets. Match adjacent hardware in exact style and finish, without added cost. Concealed fastenings of every type are available to the designer of custom cabinet work.



BENEFIT OF MASTER CRAFTSMEN

The journeymen woodworkers employed in architectural woodwork plants are skilled in all forms of special mill-work. They apply the best cabinet techniques for a particular job, not a routine performance.

APPLICATION OF ULTRA-MODERN MACHINERY

Architectural woodwork manufacturers use the finest products of the machine industry, which can work to tolerances as close as those used in metalworking plants. Your area member of A.W.I. does not have a top-heavy investment in production machinery for particular processes. Therefore, he is able to invest in up-to-date machines for a variety of functions, so that your most intricate designs can be constructed precisely as specified.

EASY MAINTENANCE

Wood has the advantage that it can be repainted or refinished at will to conform to changes in the decoration of the room. Wood will not reveal or show previous applications of finish; and abrasion spots, indentations or damages can readily be filled or repaired to restore the cabinet to its original condition.

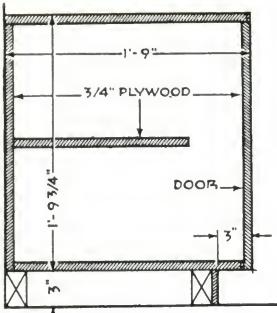


Mill assembled cabinetry of special design gives you the advantage of specifying the exact manner in which the components shall be constructed. Your area member of A.W.I. is an expert on door construction for cupboards, cabinets, and wardrobes. He can suggest methods for attaching any type of material for working surfaces, and for economizing on shelving and drawer construction, including the proper types of runs or slides to be installed.

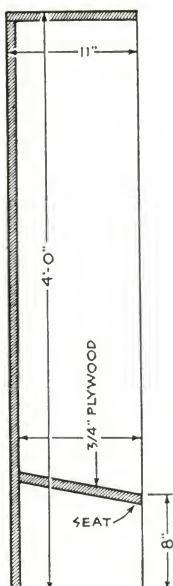
No other material can match the warmth and quiet elegance of cabinet work designed in wood. The continuing trend toward the use of more wood in contemporary interiors suggests a re-appraisal of this natural material for use in all kinds of cabinets, open shelving, and built-ins for schools, institutions, offices, hospitals and fine residences — large or small. Your local member of A.W.I. will work with you — as a member of your team — to help you create attractive and functional interiors that are long-lasting and easy to maintain.

Many architects have requested additional drawings. Here, in Brochure No. 6, there is presented an outstanding group of details of custom designed cabinet and casework chosen from various issues of "Progressive Architecture." These plates have been carefully selected by an industry advisory committee, and it is the sincere hope of your area A.W.I. member that this brochure will be of genuine assistance for reference purposes when you detail your own designs.

Front Cover: Residence of A. Watson Armour, III. Lake Forest, Illinois. Cabinet work in new television viewing room, all in Northern Brown Ash. Architect: Robert G. Work, A.I.A.



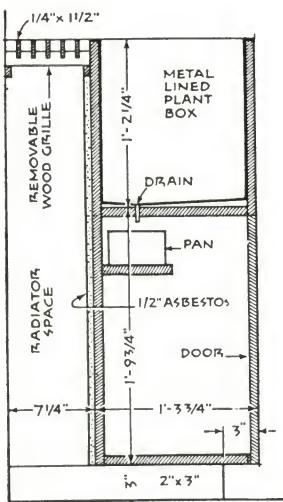
Section A 3/4" SCALE



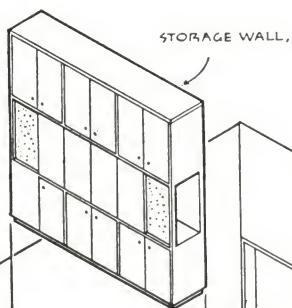
Section B
3/4" SCALE



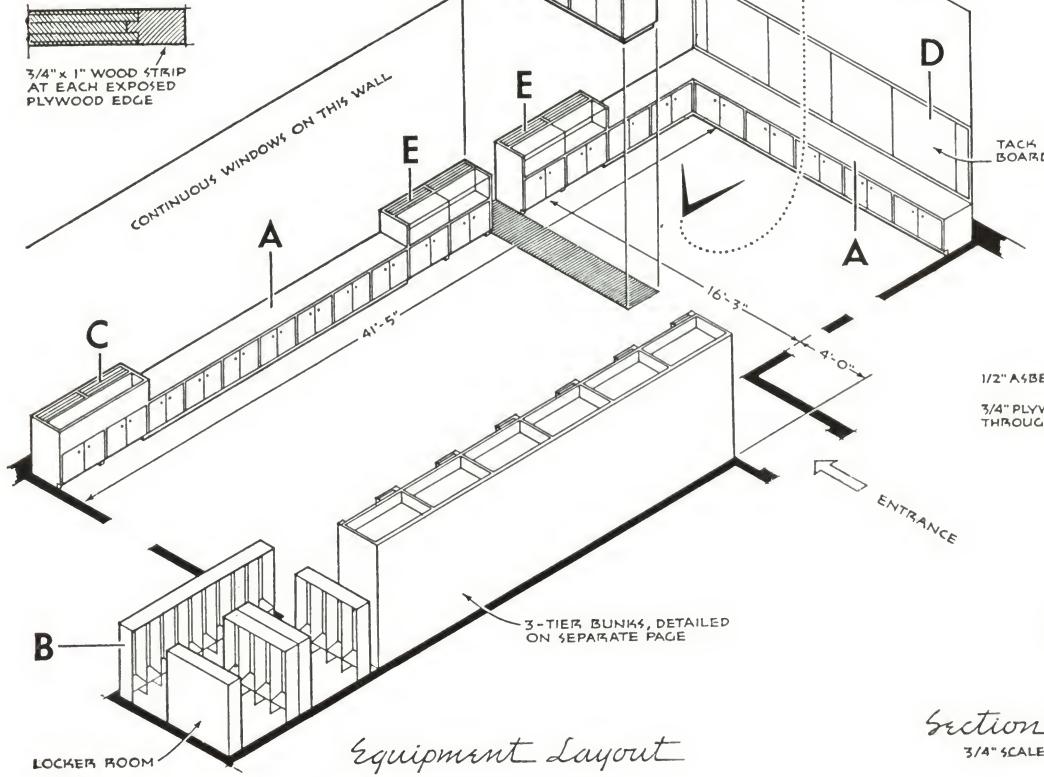
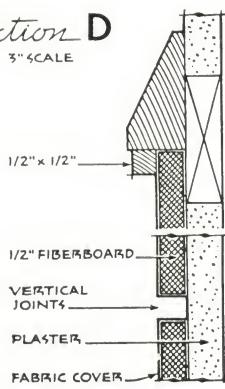
SUZANNE SZASZ



Section C 3/4" SCALE



Section D
3" SCALE



Equipment Layout

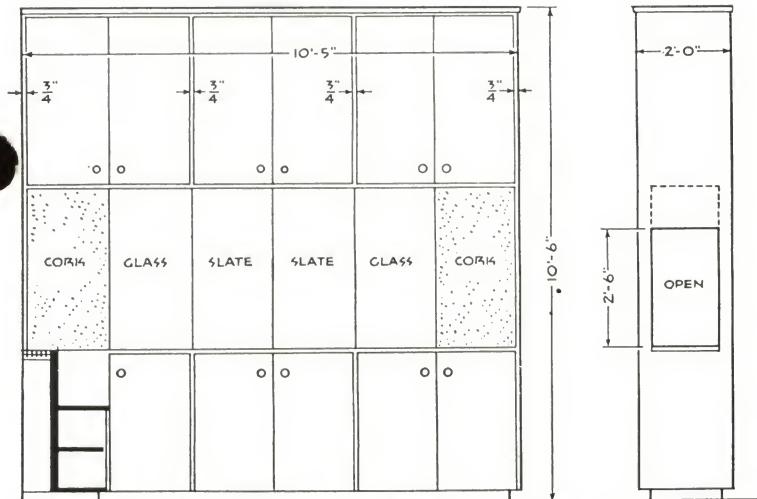
MILTON SCHOOL, Rye, N. Y.

Caleb Hornbostel, Architect

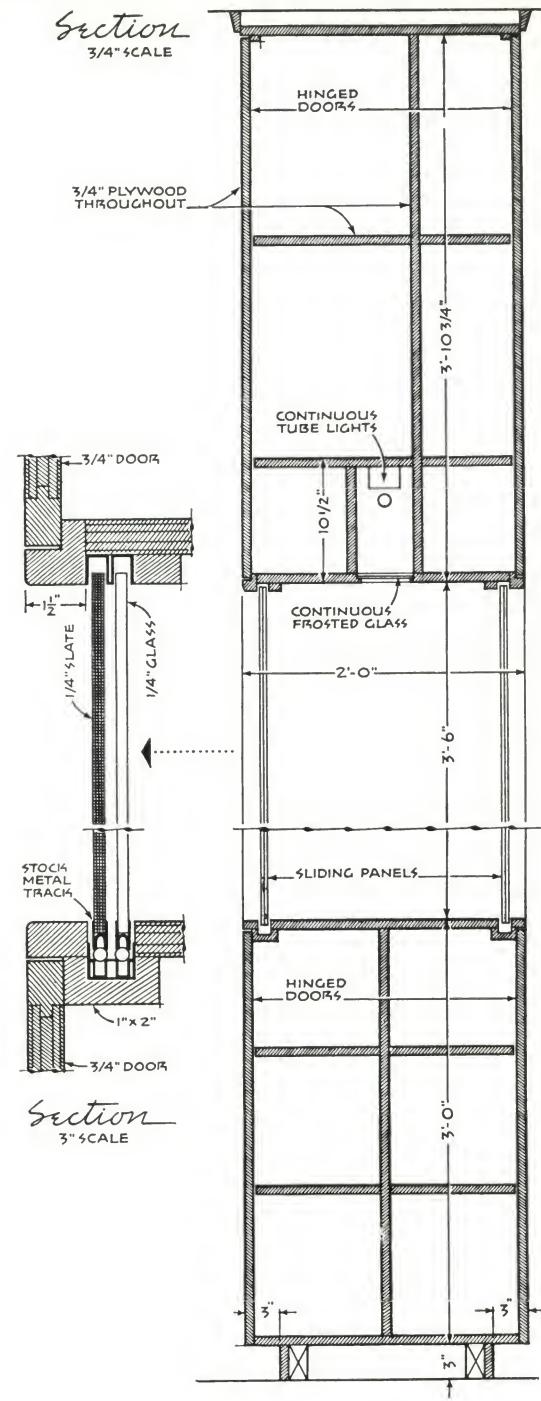
kindergarten: storage cabinets



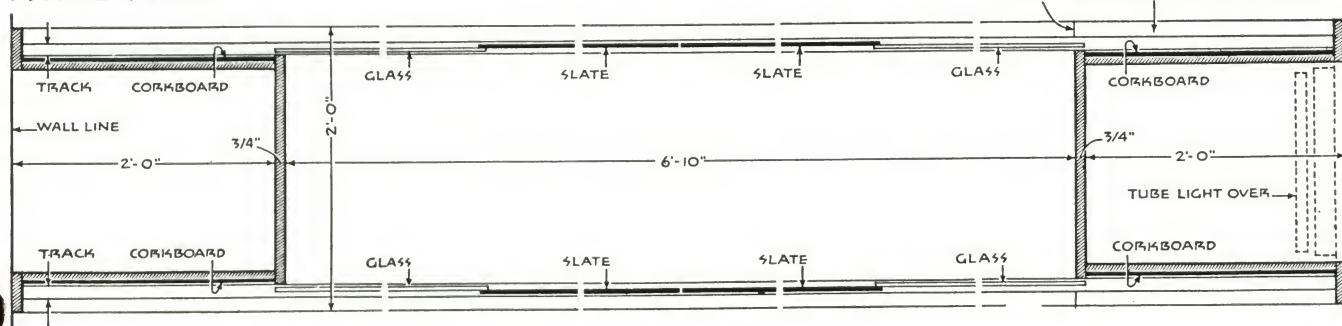
SUZANNE SZASZ



end



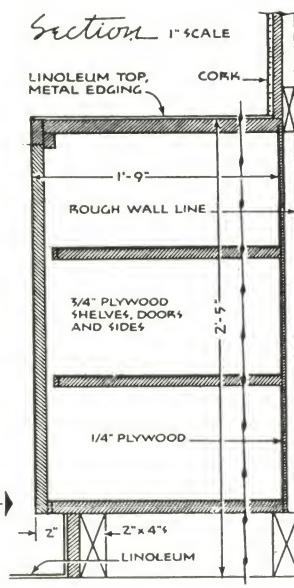
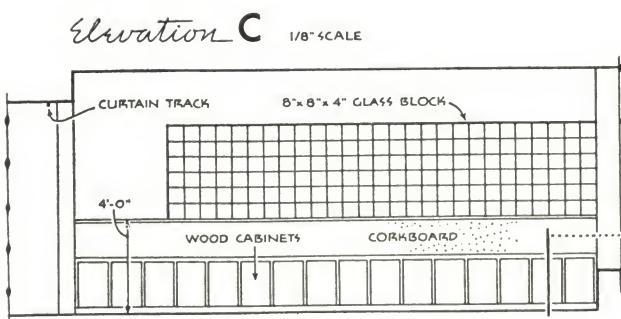
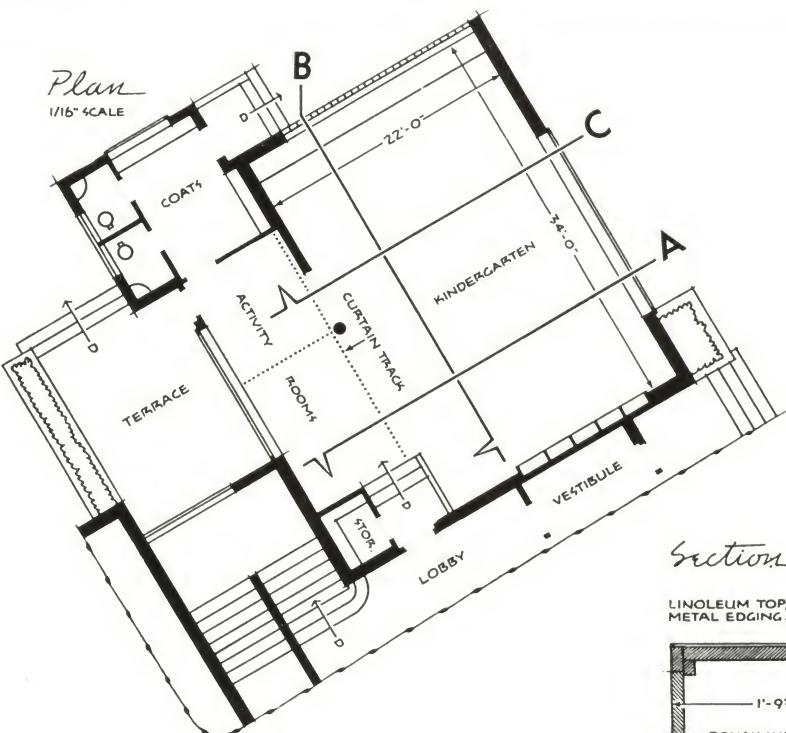
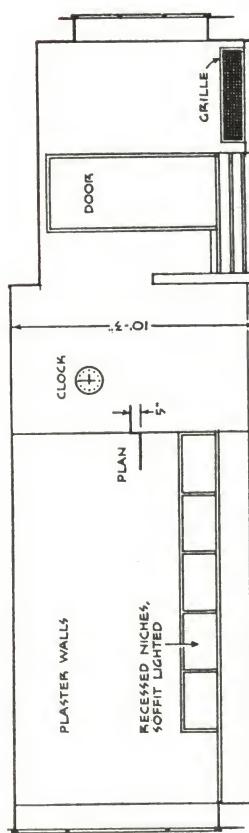
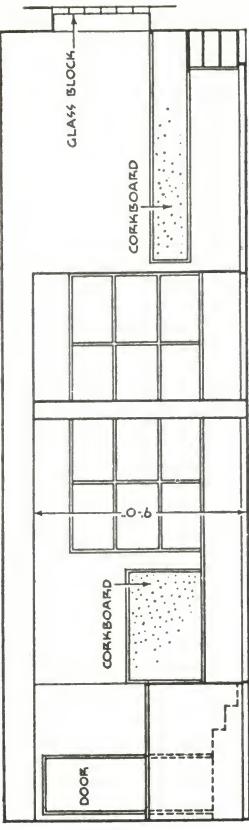
Plan 3/4" SCALE



MILTON SCHOOL, Rye, N. Y.

Caleb Hornbostel, Architect

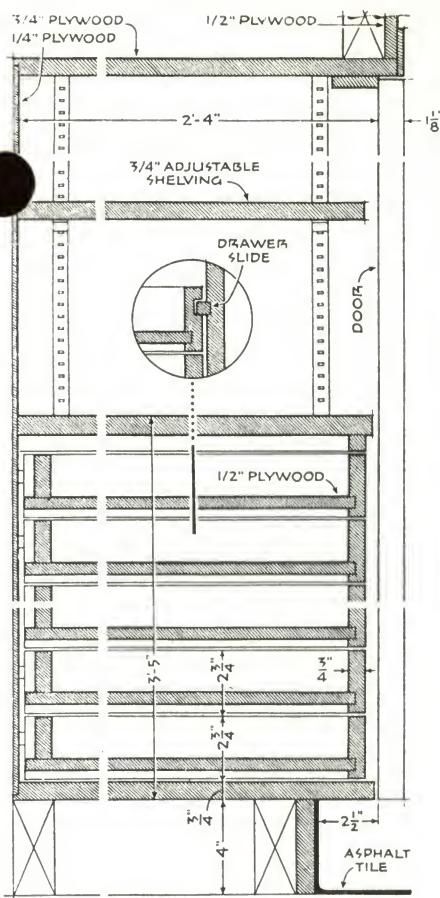
school: kindergarten



NORTHVILLE GRADE SCHOOL, Northville, Mich.

Lyndon & Smith, Architects

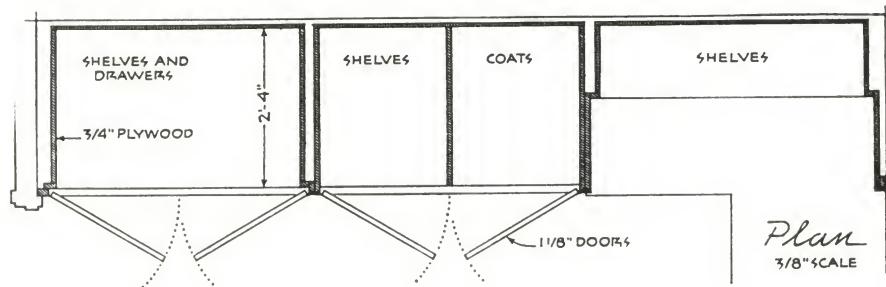
SCHOOL: kindergarten storage cabinets



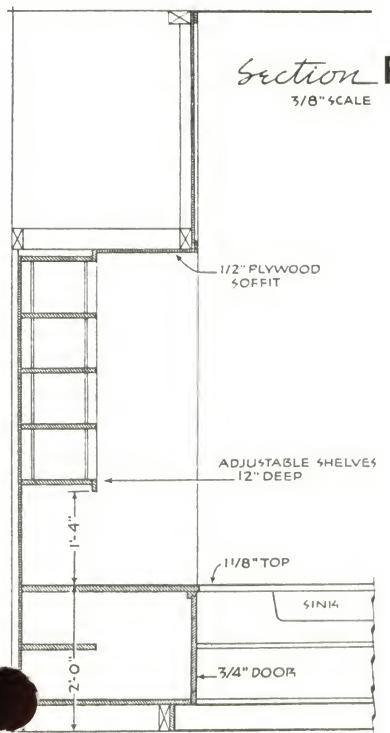
Section A 1 1/2" SCALE



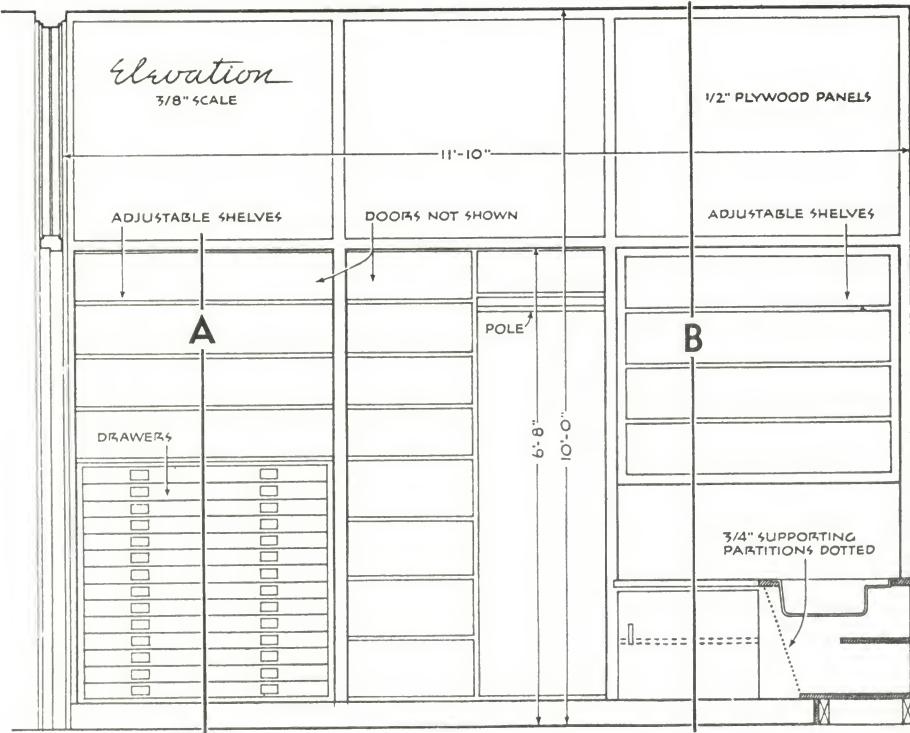
HEDRICH-BLESSING



Plan
3/8" SCALE



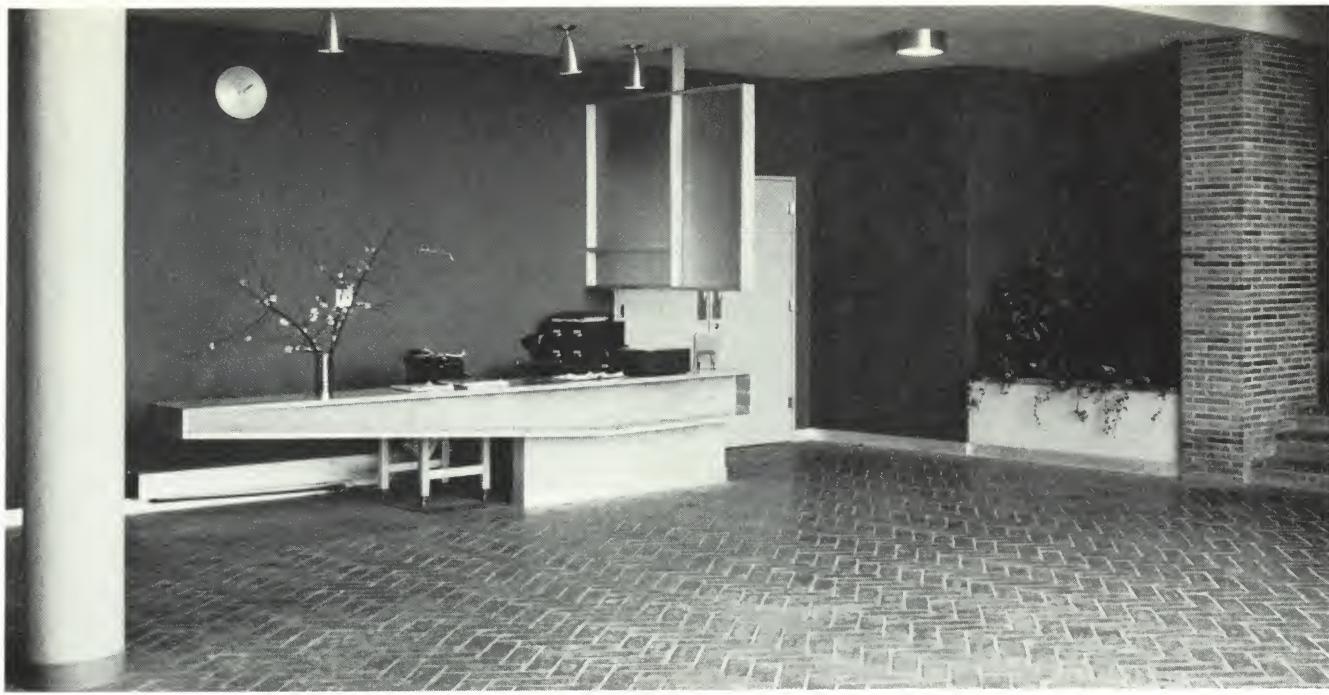
Section B
3/8" SCALE



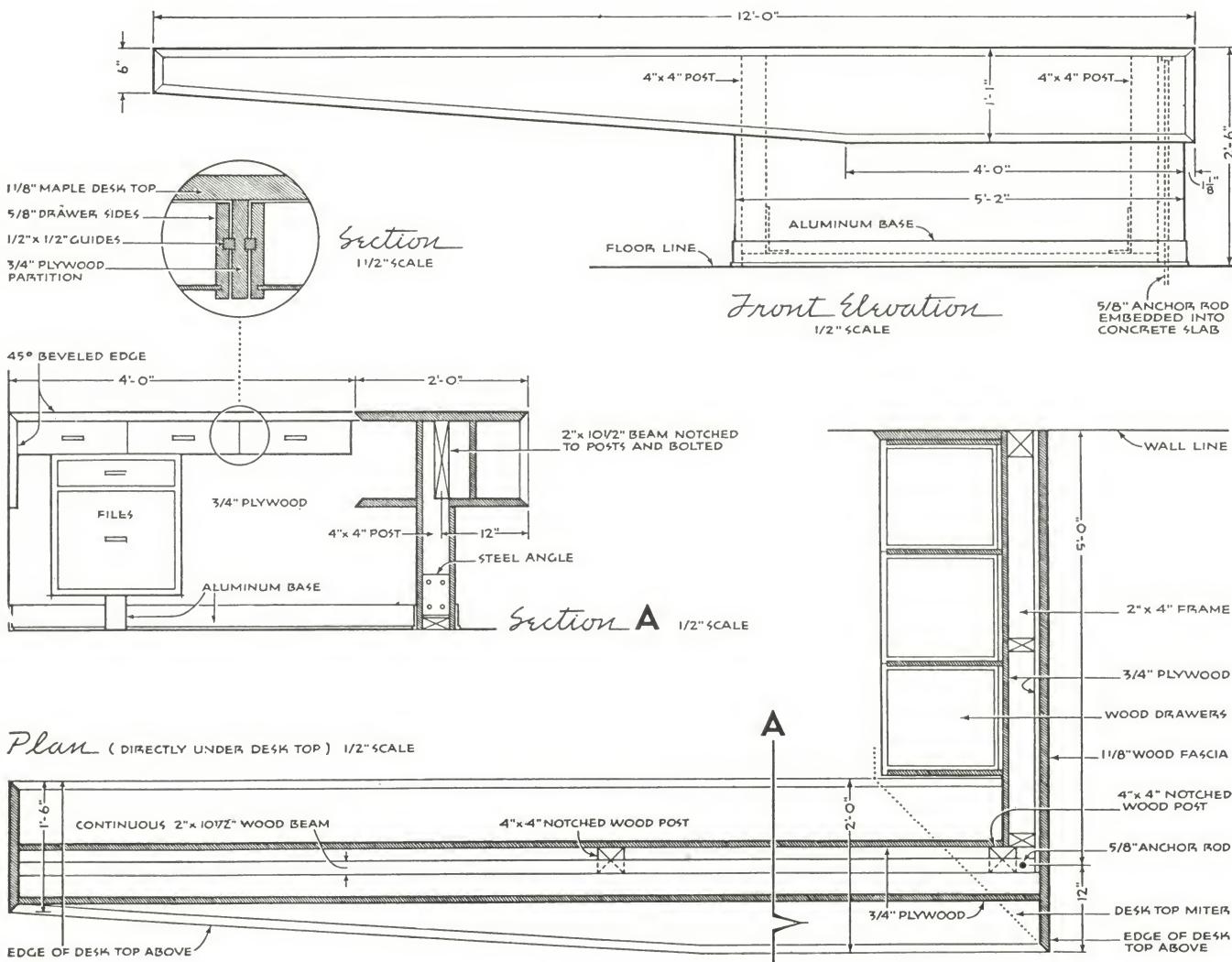
DREXEL SCHOOL, Cicero, Illinois

PERKINS & WILL, ARCHITECTS

administration building: receptionist's desk



DEARBORN - MASSAR

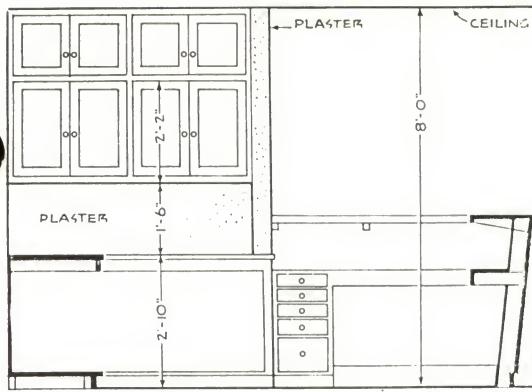


SCHOOL ADMINISTRATION BUILDING, Seattle, Wash.

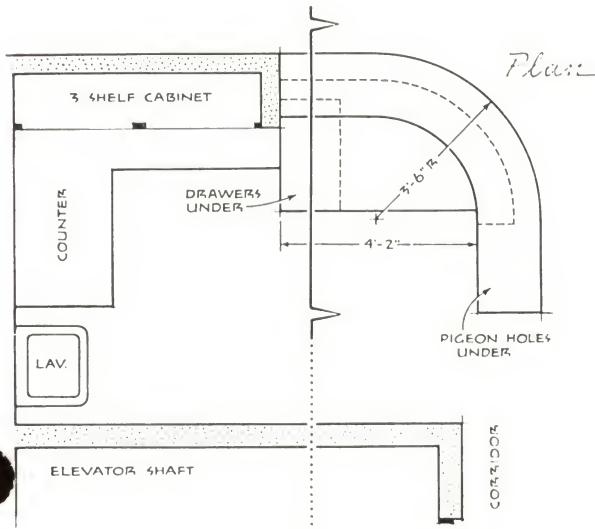
J. Lister Holmes & Associates, Architects

Progressive Architecture

hospital: nurse's station

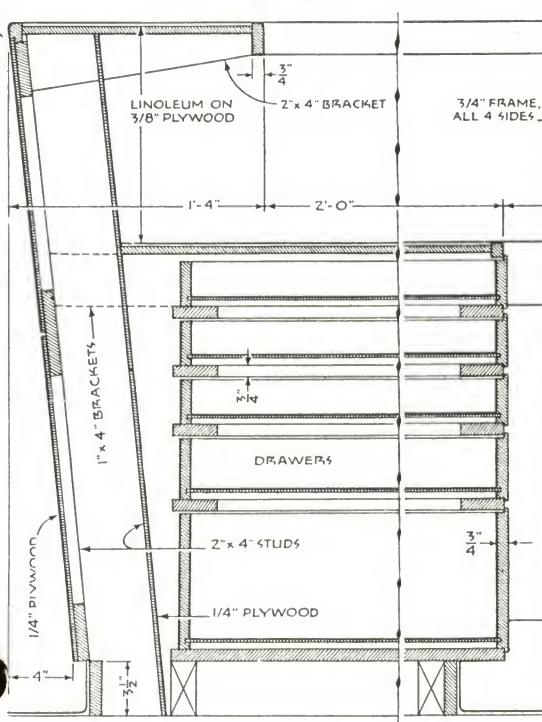


elevation 1/4" SCALE

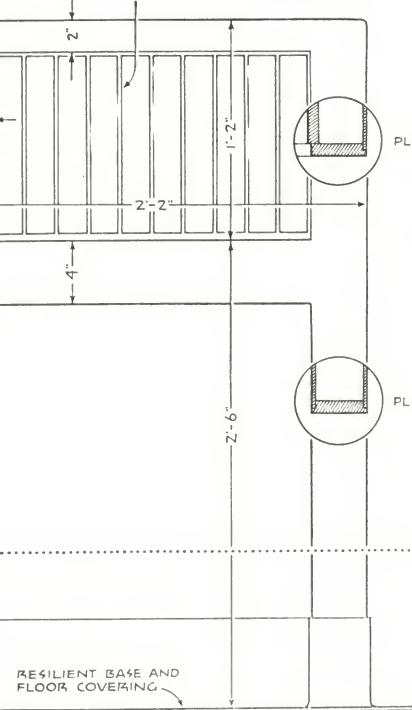


JULIUS SHULMAN

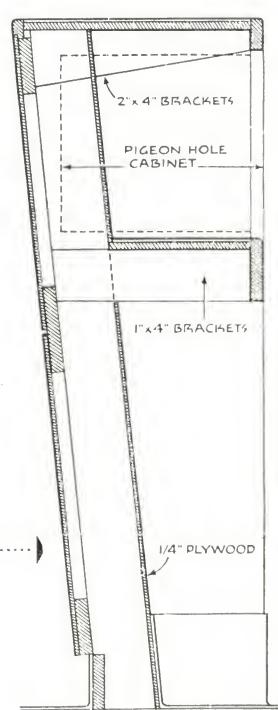
Section 1" SCALE



1/4" PARTITIONS ON 2" CENTERS



Section 1" SCALE



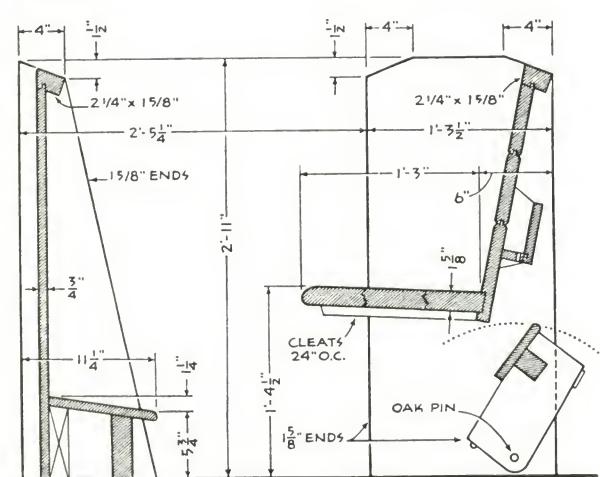
NORTH SAN DIEGO COUNTY HOSPITAL, Escondido, Calif.
Louis C. Dixon, Lee B. Kline, Associate Architects



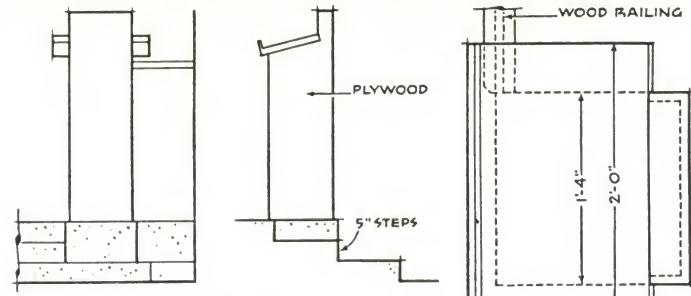
JULIUS SHULMAN

7

PEWS



DESERT EPISCOPAL CHURCH, Palm Springs, Calif.

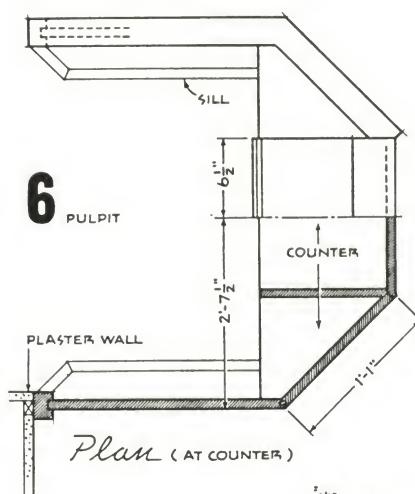


Front and Side 1/4" SCALE

5
LECTURN

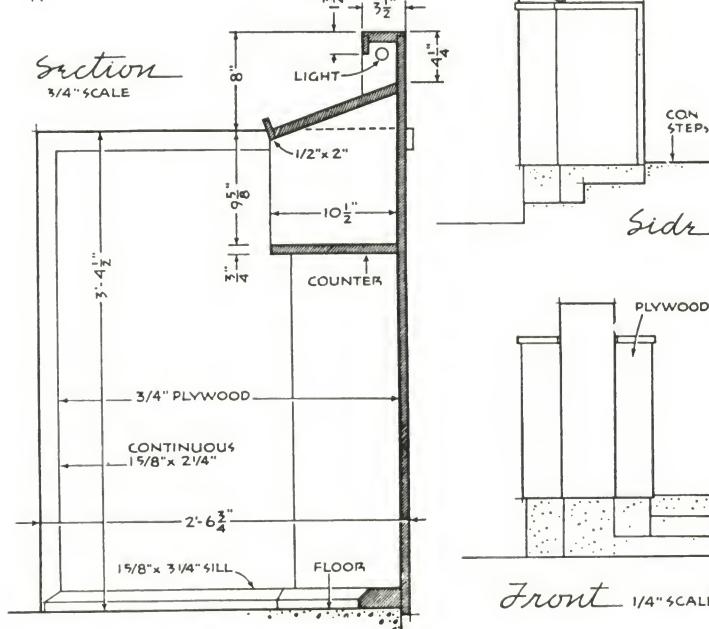
Section
3/4" SCALE

Plan (AT TOP) 3/4" SCALE



Plan (AT COUNTER)

Section
3/4" SCALE

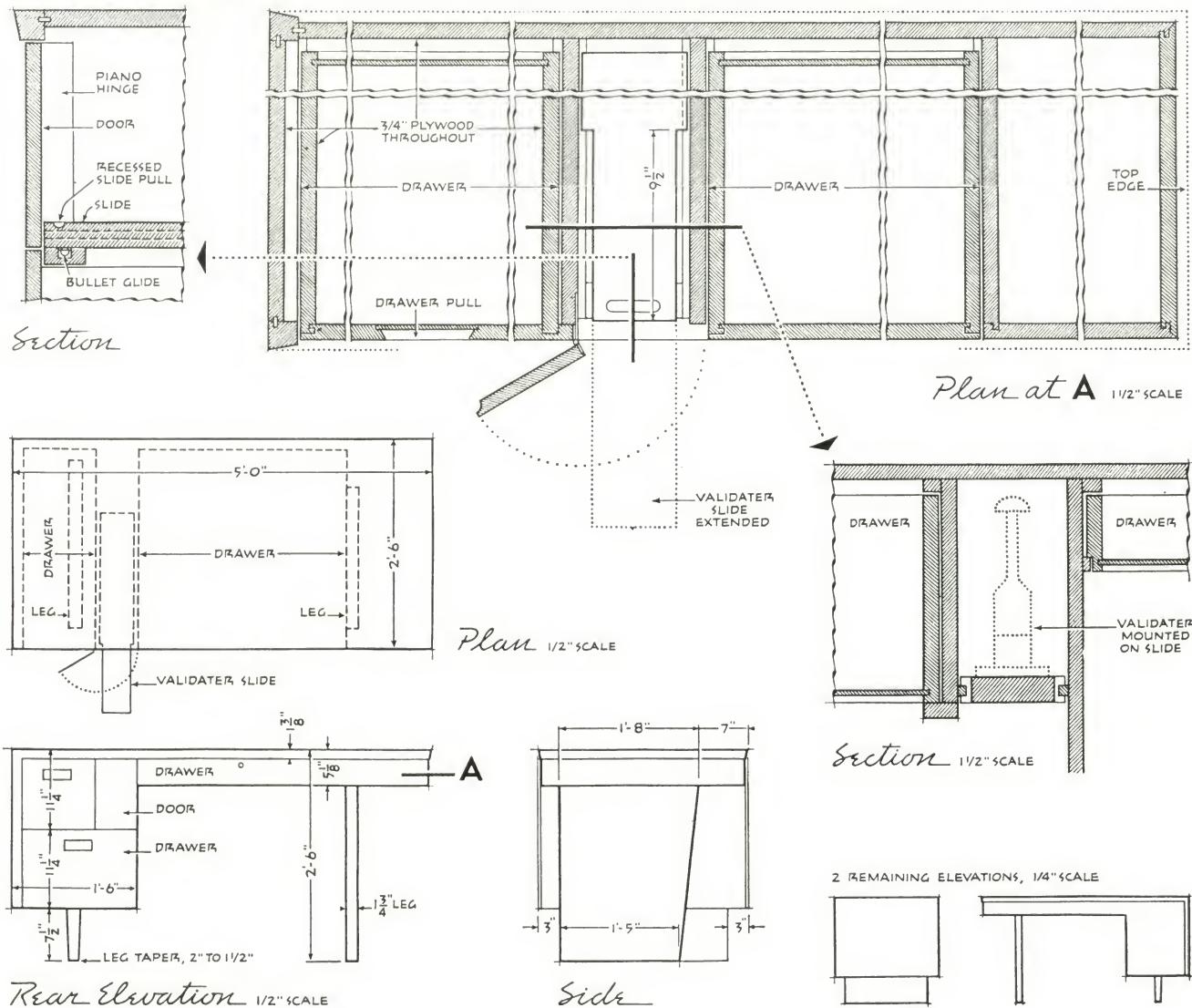


CLARK & FREY, ARCHITECTS

OFFICE: DESK



Richard Garrison



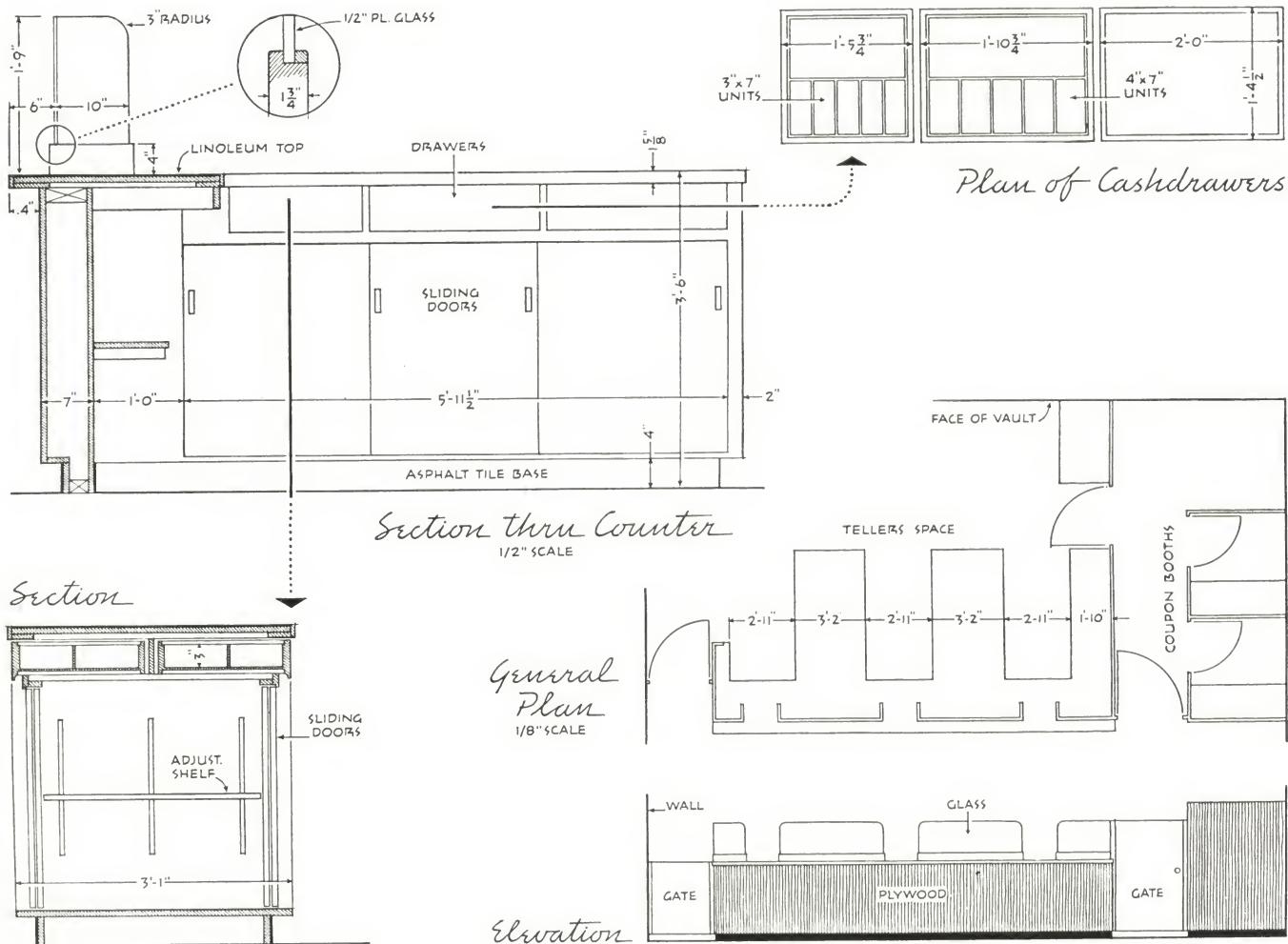
VENEZUELAN AIRLINES TICKET OFFICE
New York, New York

BEESTON-STOTT-PATTERSON
Designers

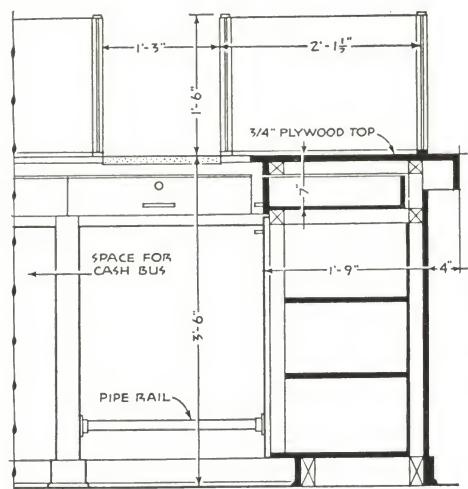
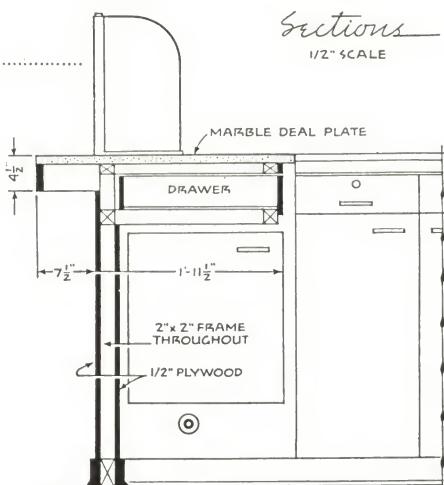
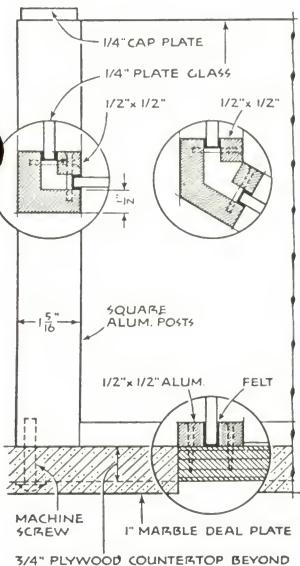
BANK: CHECK COUNTER



Hedrich-Blessing Studio

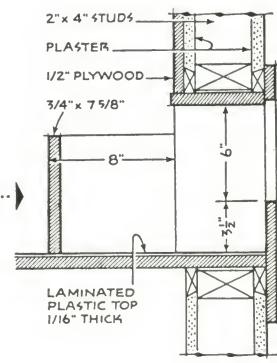
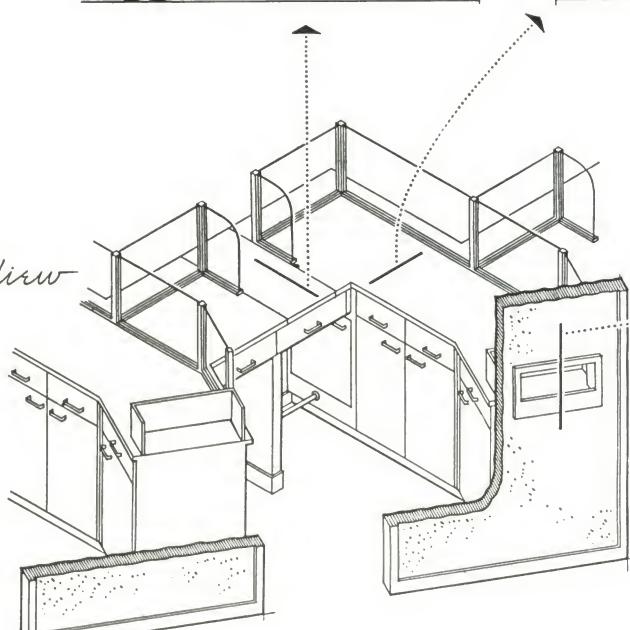


bank: teller's counter



Railing Details

3" SCALE

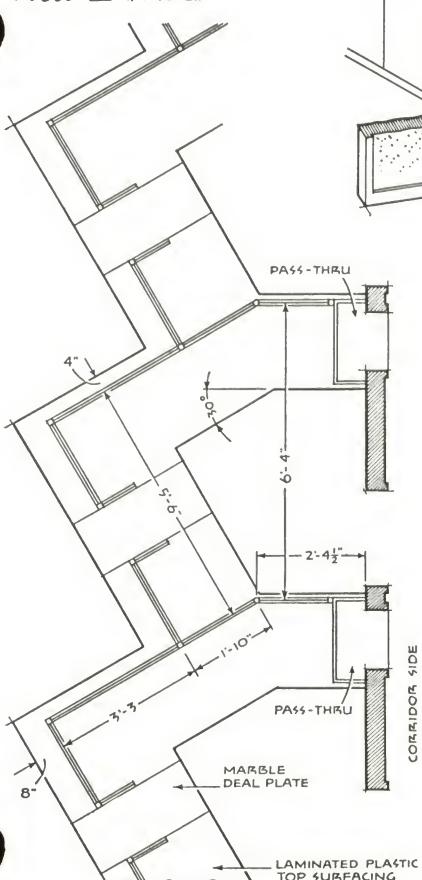


Pass-thru section

1" SCALE

Plan

1/4" SCALE



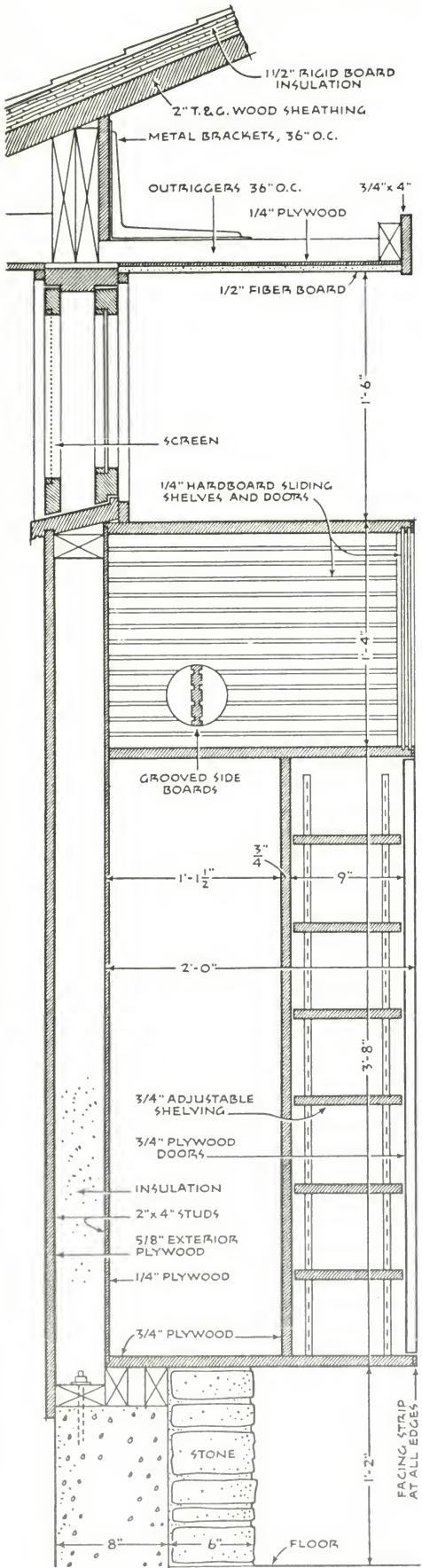
INDUSTRIAL STATE BANK BUILDING, Houston, Tex.

MacKie & Kamrath, Architects

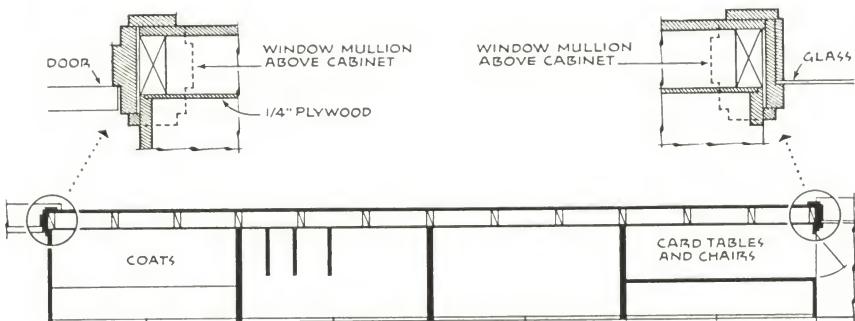
Progressive Architecture

house: storage wall

Section at A 1" SCALE

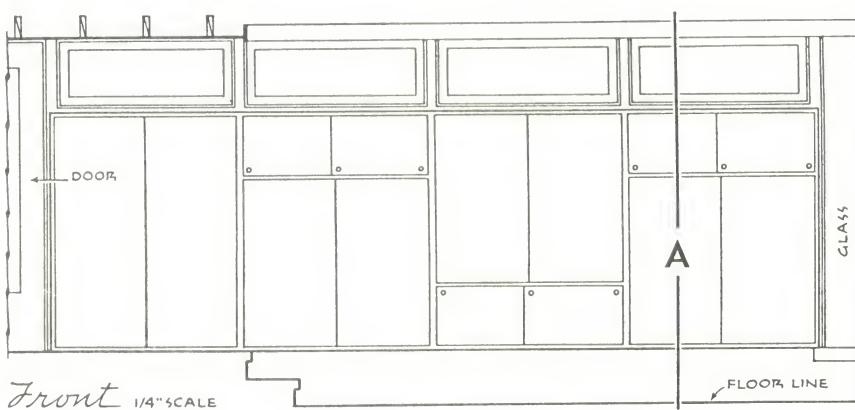
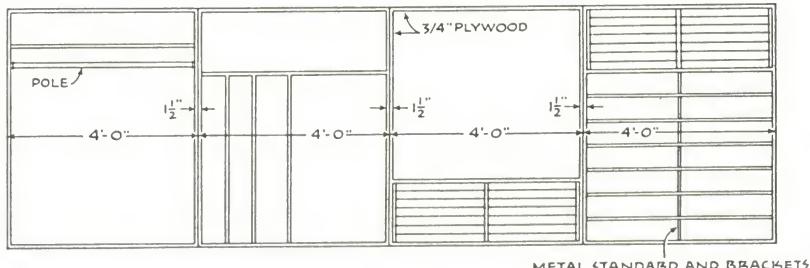


REYNOLDS PHOTOGRAPHY INC.



Plan 1/4" SCALE

Doors removed

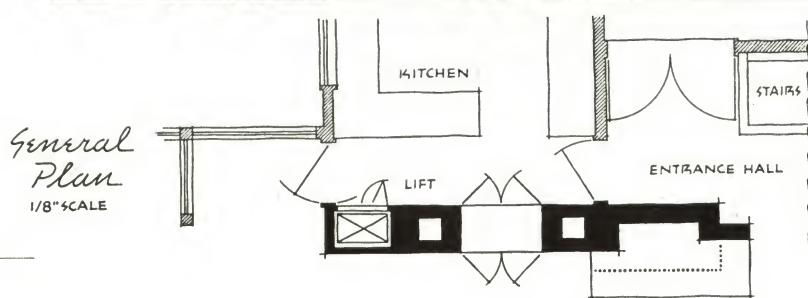
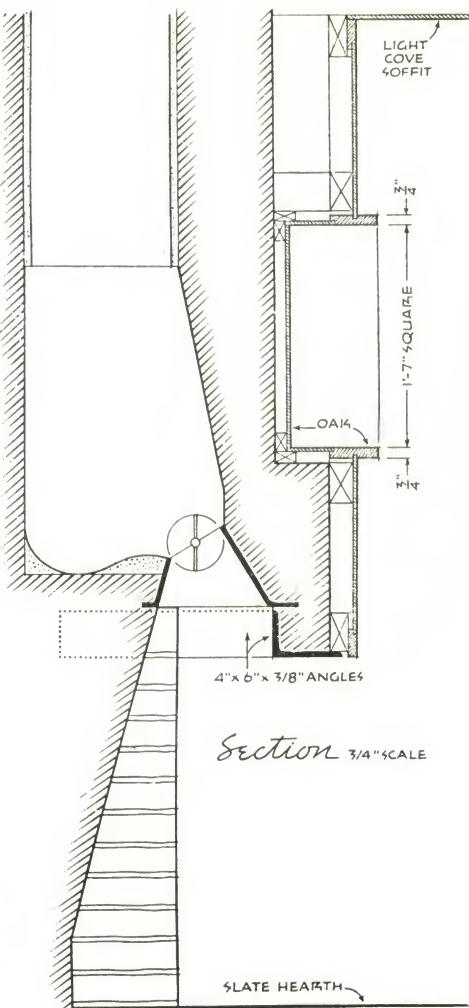


ARCHITECT'S OWN HOUSE, Boulder, Colo.

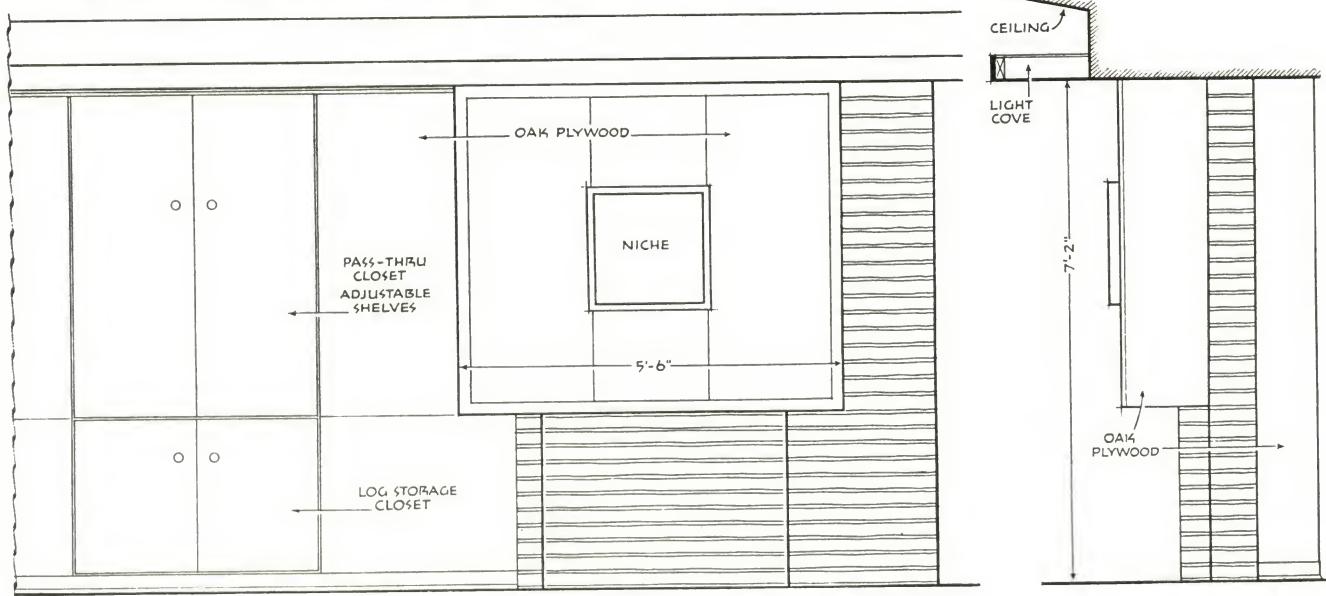
James M. Hunter, Architect

HOUSE: CABINET WALL

Rudolf McCay Morris



Front and End Elevation 3/8" SCALE



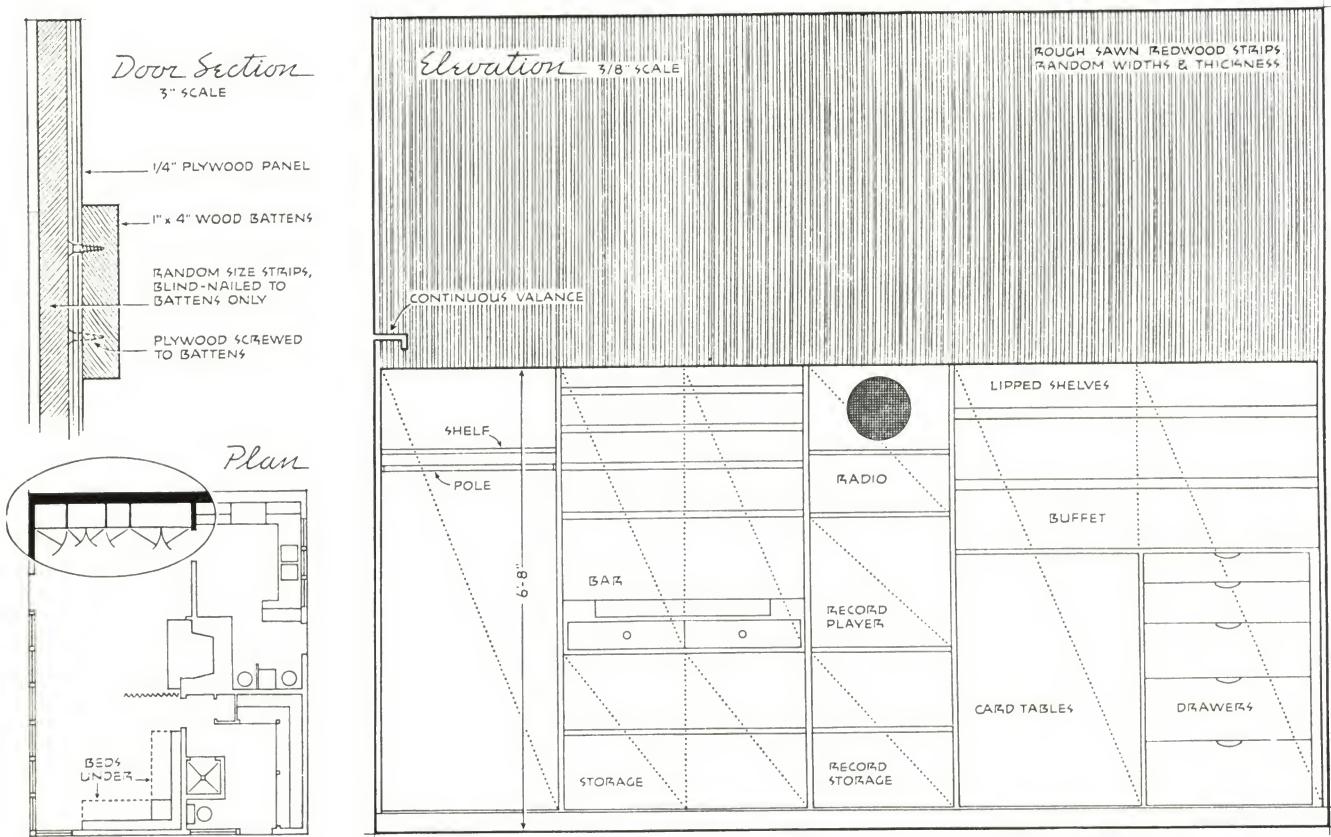
ERIC SEVAREID HOUSE
Alexandria, Virginia

CHARLES M. GOODMAN
ARCHITECT

HOUSE: CABINET WALL



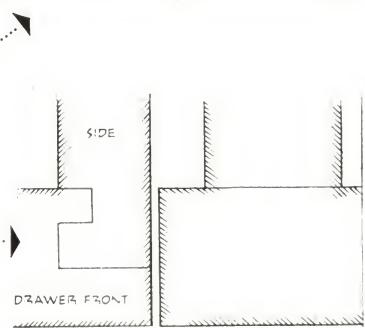
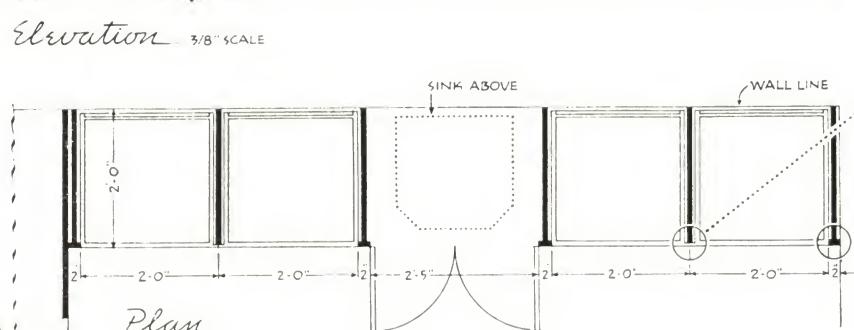
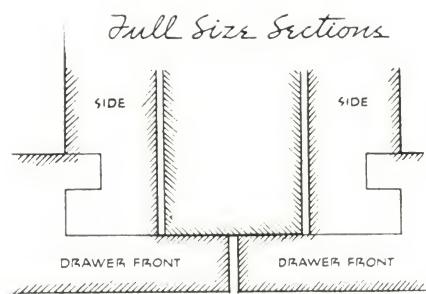
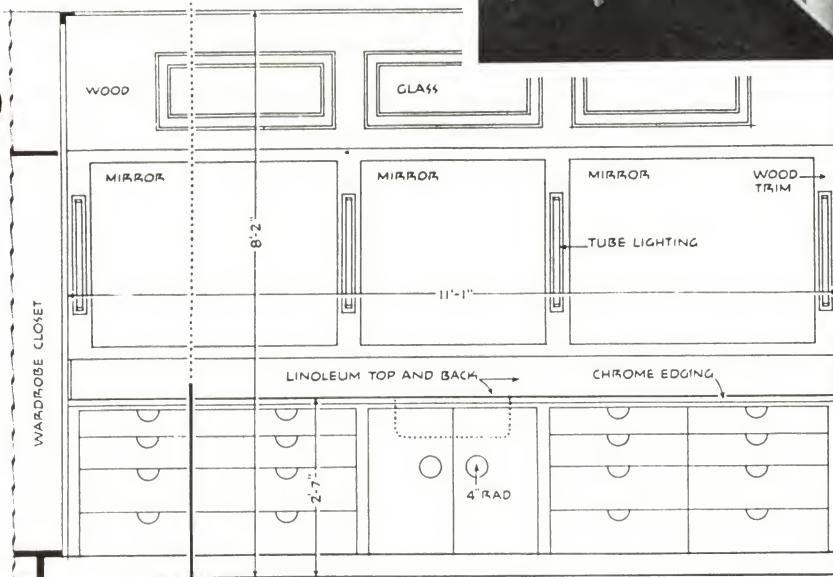
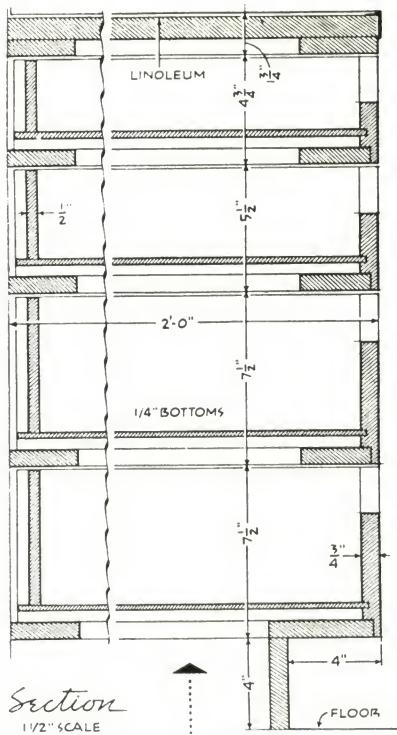
Lillian Shulman



COINTE RESIDENCE
Hollywood, California

HAROLD J. BISSNER
Architect

HOUSE: DRESSING COUNTER



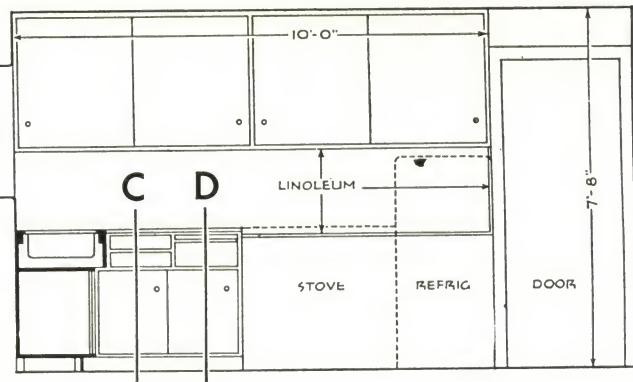
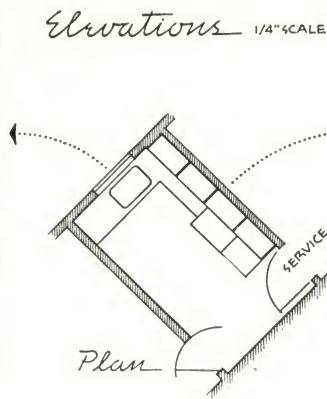
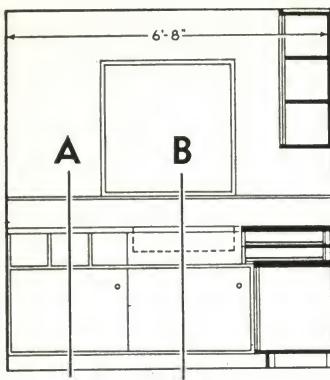
RALPH CLIFFORD HOUSE

Los Angeles, California

CLIFFORD-LINDSTROM

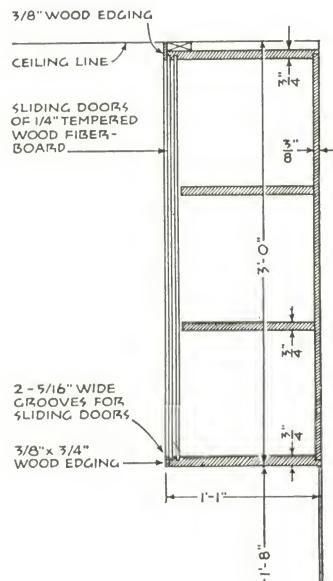
Designers

apartment: kitchen

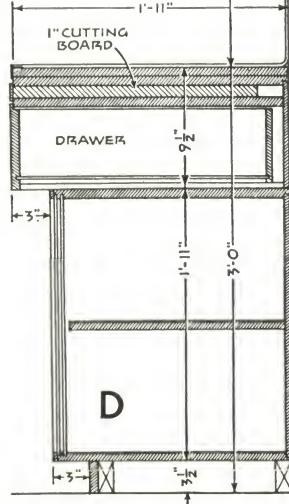
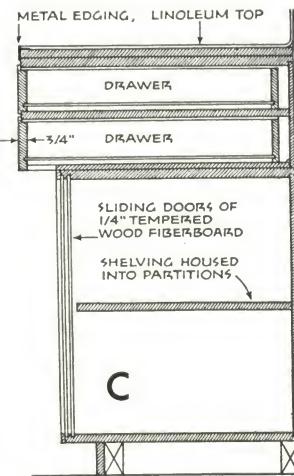
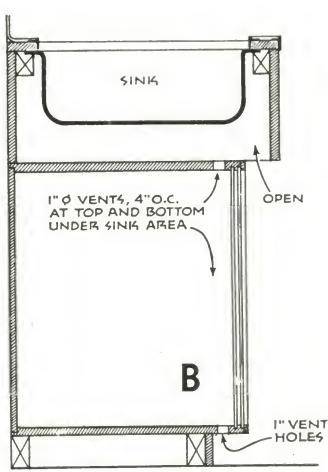
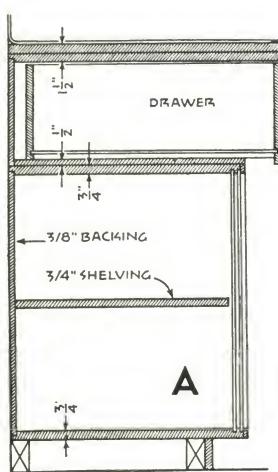


DEARBORN - MASSAR

ALL CABINETS MADE OF PLYWOOD



Base Cabinet Sections 3/4" SCALE



LAKEVIEW BOULEVARD APARTMENTS, Seattle, Wash.

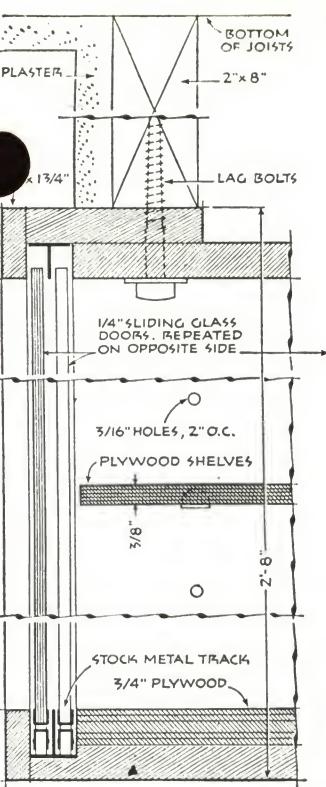
Chiarelli & Kirk, Architects

Progressive Architecture

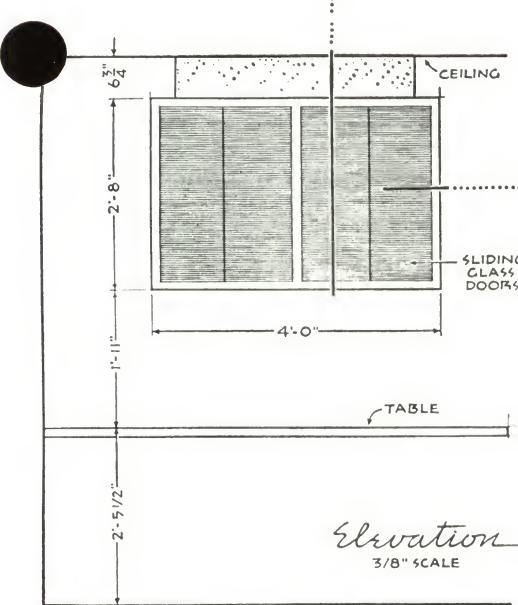
RESIDENCE: suspended 2-way kitchen cabinet



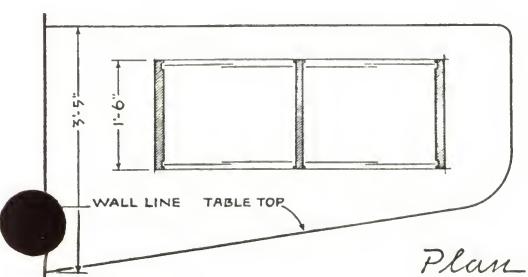
ROBERT C LAUTMAN



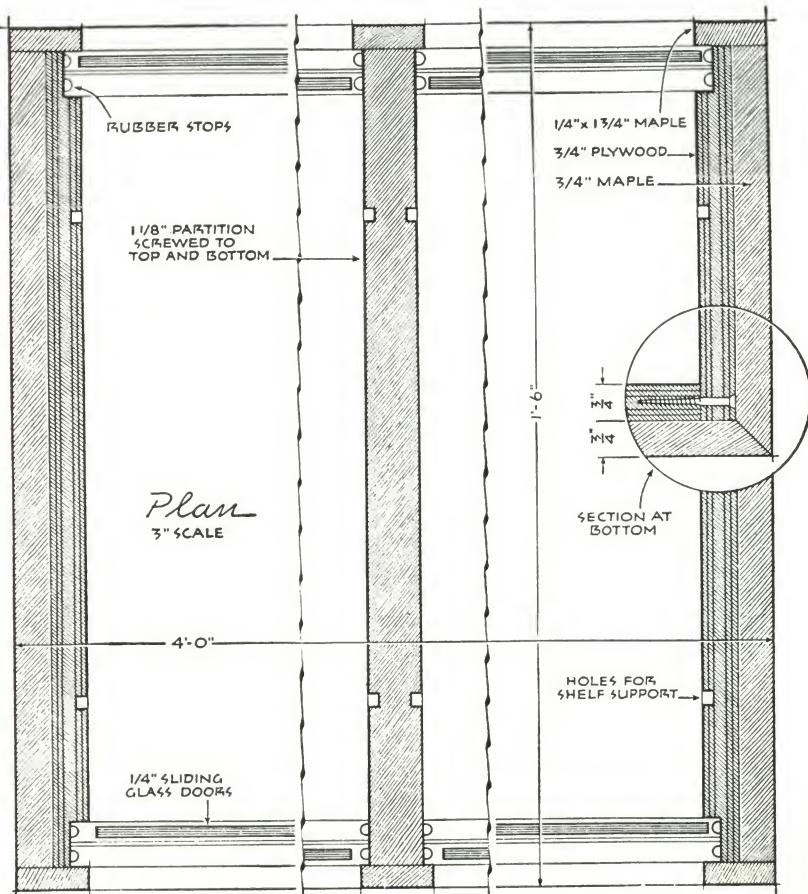
Section
3" SCALE



Elevation
3/8" SCALE



Plan



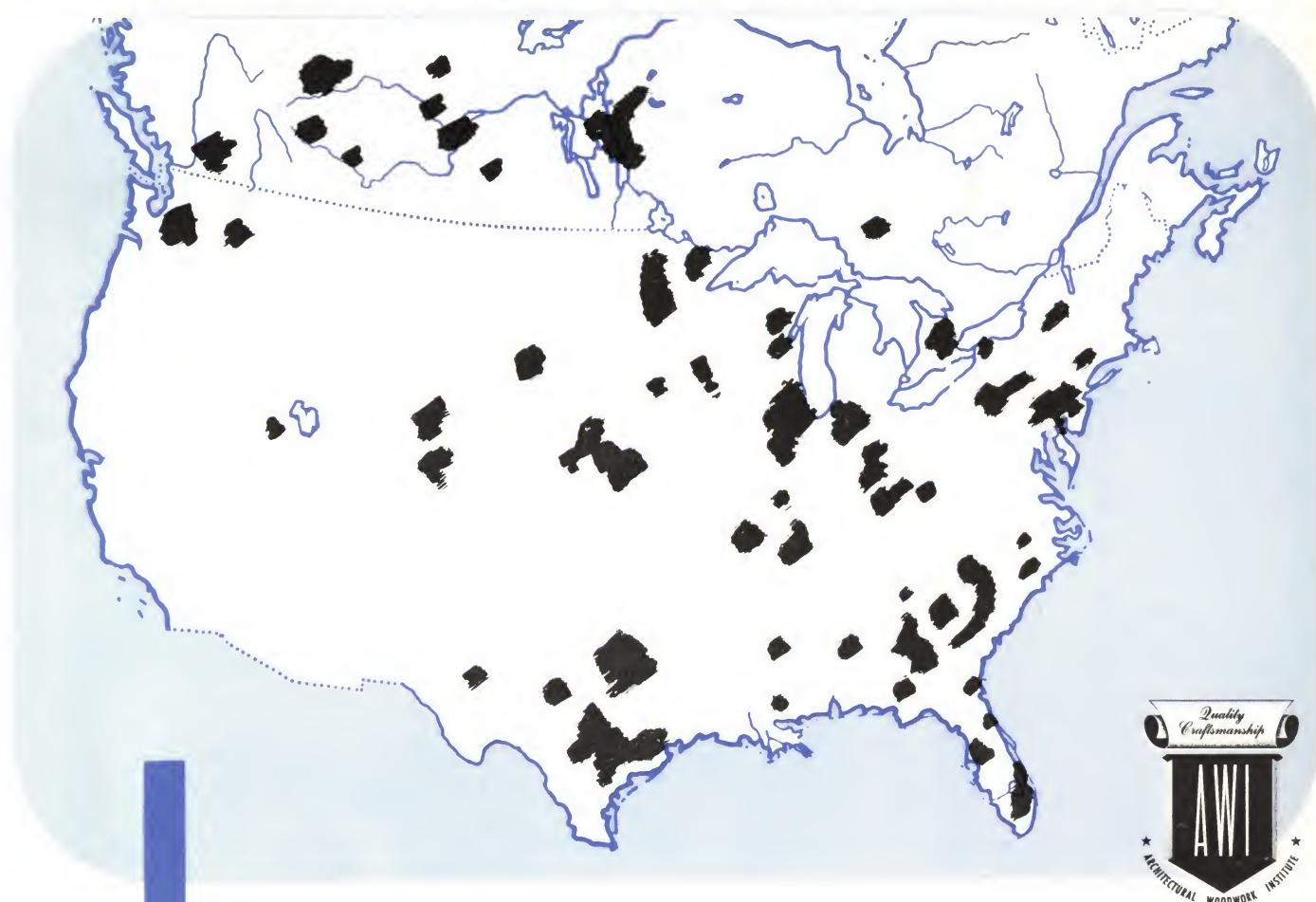
Plan
3" SCALE

DORT RESIDENCE, Washington, D. C.

Progressive Architecture

J. P. TROUCHAUD, DESIGNER

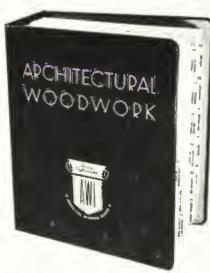
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Each A.W.I. member in your locality is a manufacturer of all forms of fine architectural woodwork. He is a specialist qualified to offer you valuable assistance in detailing and specifying special millwork. Because of his specialized knowledge and long experience, he can authoritatively advise you on the choice of woods, cost, availability, and serviceability. He can often suggest economies in construction that will enhance the finished appearance or durability of the project.

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NOTE OF ACKNOWLEDGMENTS

The Architectural Woodwork Institute and its Member Companies gratefully acknowledge the cooperation of various industry members and "Progressive Architecture" in the preparation of this brochure. Editorial Consultant: James Arkin, A.I.A.

PRODUCED BY THE A.W.I. TECHNICAL COMMITTEE ON CABINET WORK

Cover Photo: John W. Rosenthal

Custom Cabinet Details: Progressive Architecture

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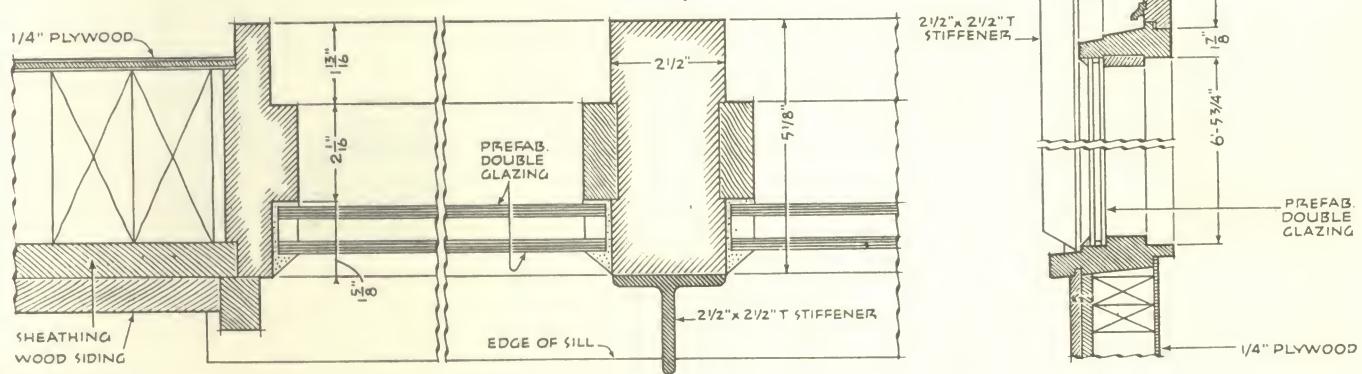
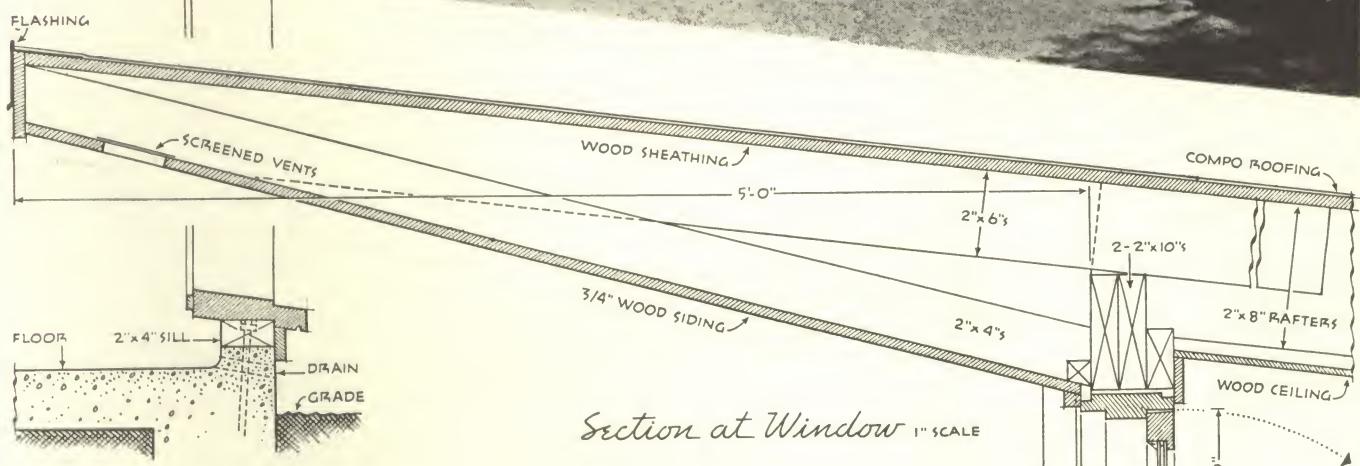
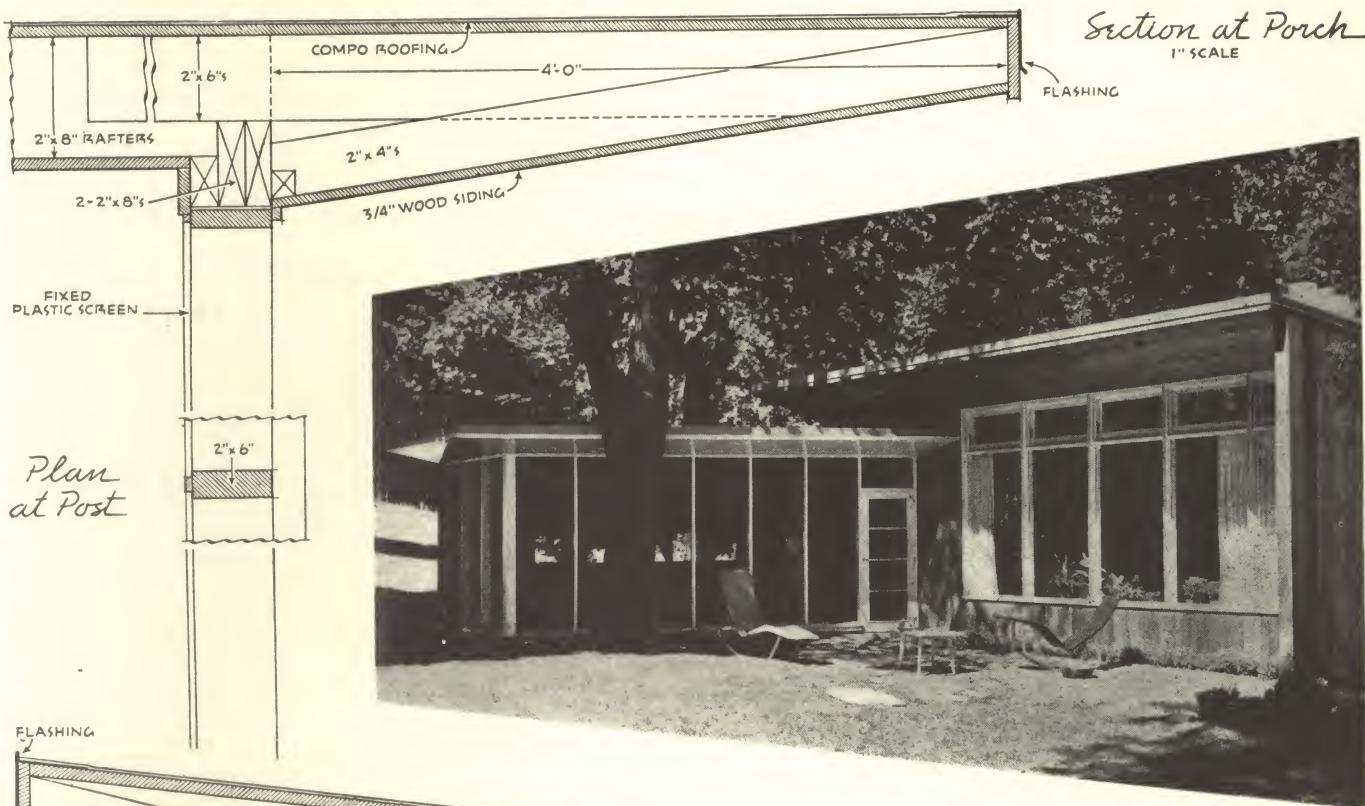
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S e l e c t e d D e t a i l s



HOUSE: ROOF OVERHANGS, WINDOWS



HOUSE MINNEAPOLIS, MINNESOTA

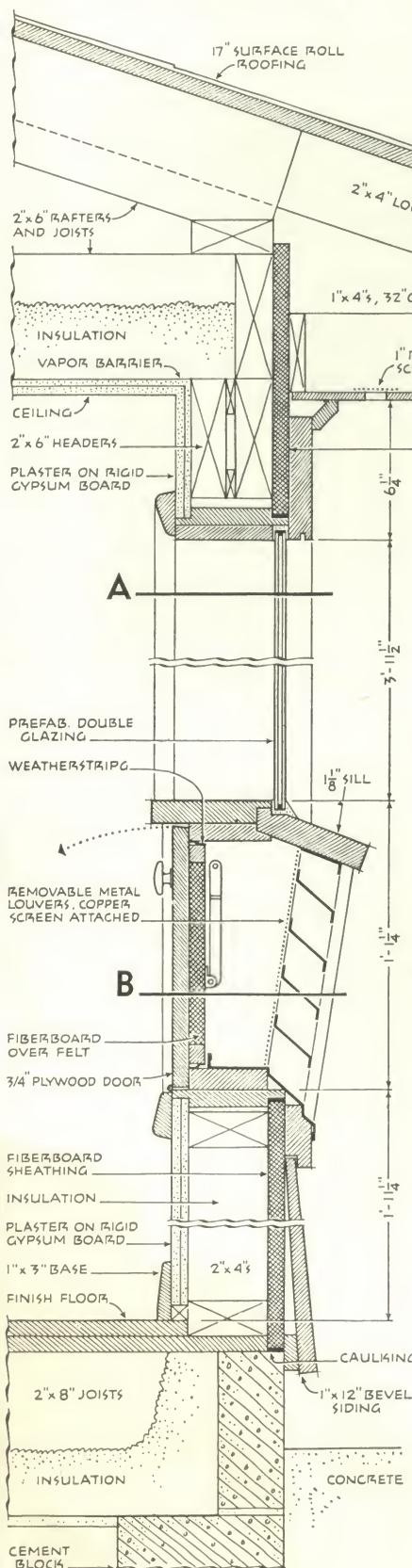
WILLIAM M. FRIEDMAN and HILDE REISS, Designers
MALCOLM E. LEIN, Associate

Selected Details

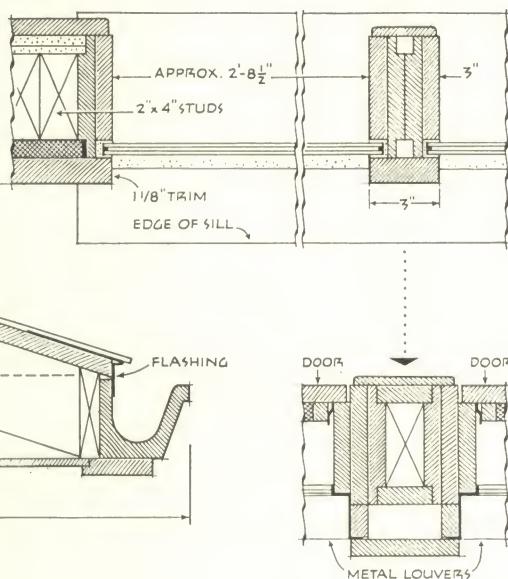
PA

HOUSE: WINDOW

Wall Section 1 1/2" SCALE



Plan at A



Mullion at B



HAZARD HOUSE

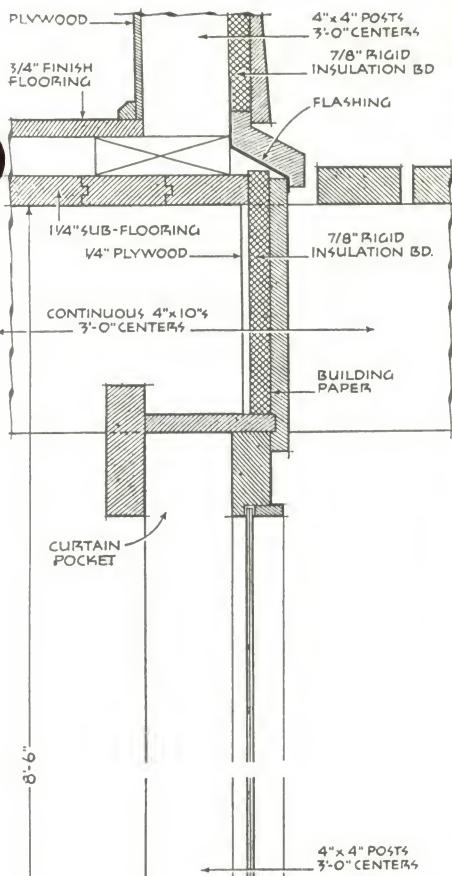
Syracuse, New York

SARGENT-WEBSTER-CRENSHAW & FOLLEY

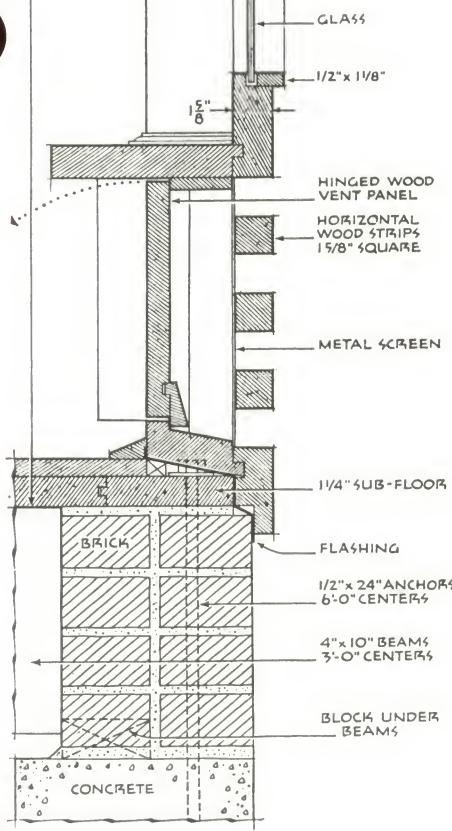
Architects

Gilbert Ask

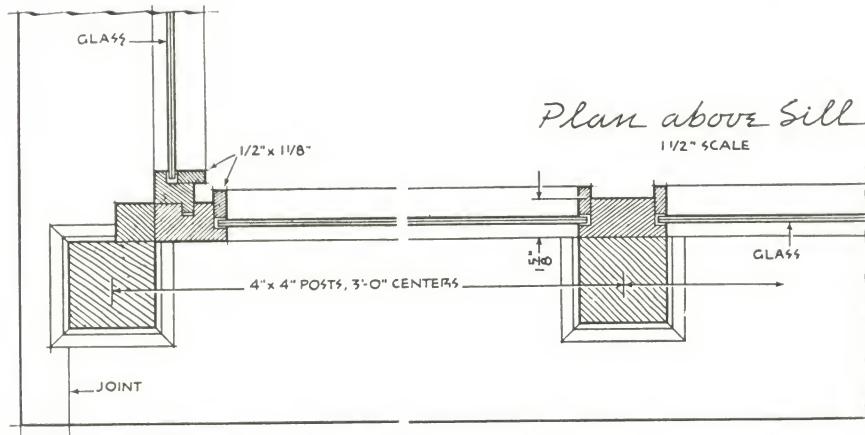
HOUSE: fixed window with ventilation panel below



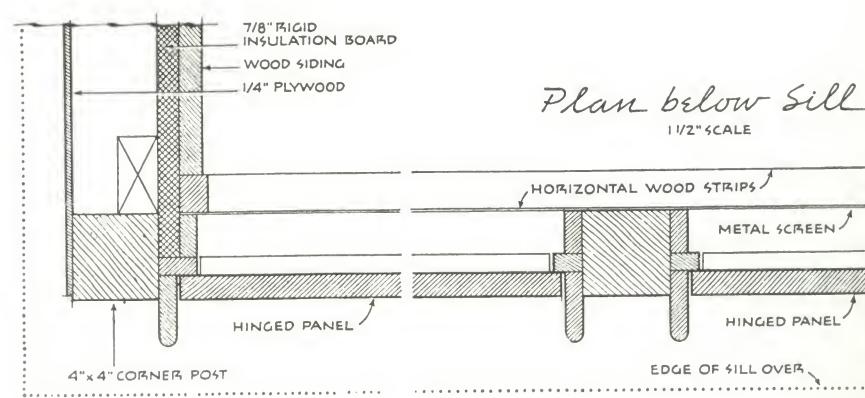
HEDRICH - BLESSING STUDIO



Wall Section 1/2" SCALE



Plan above Sill
1 1/2" SCALE

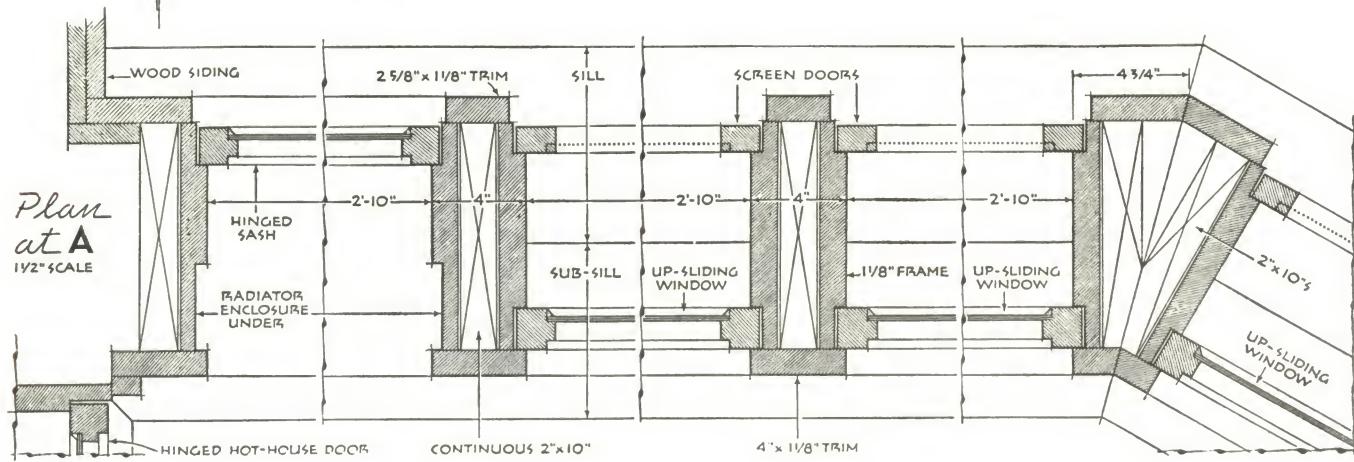
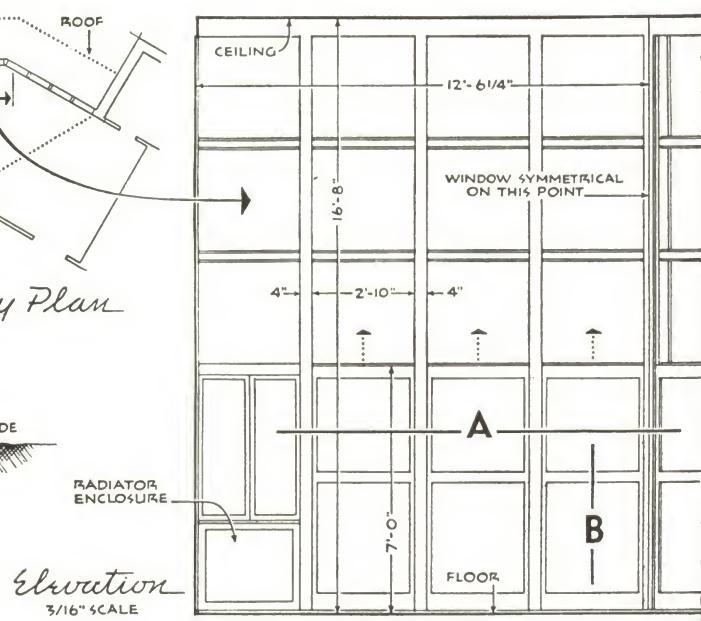
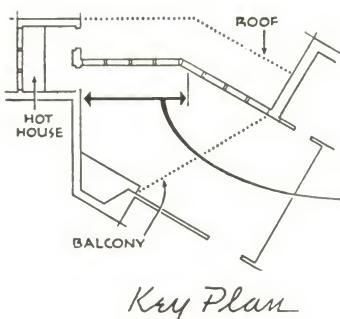
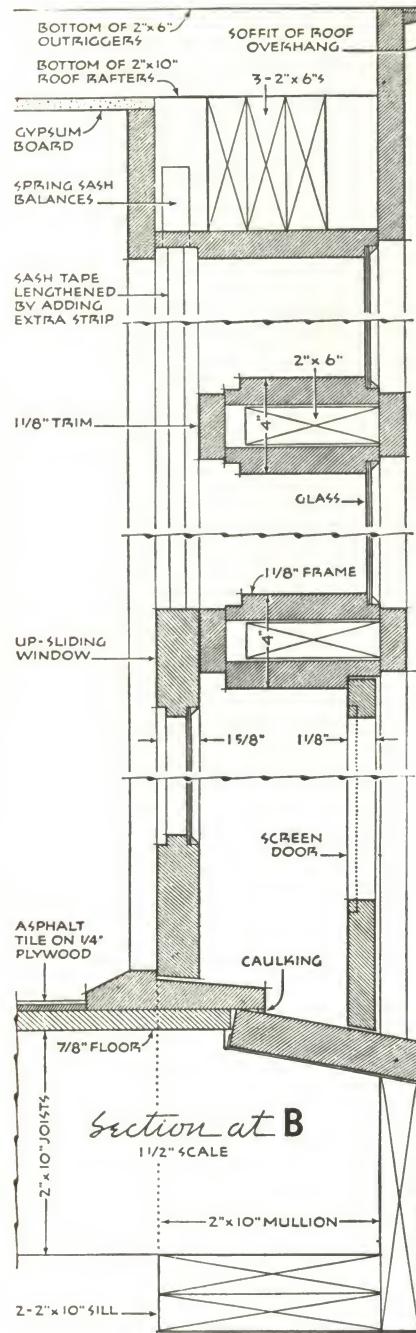


Plan below Sill
1 1/2" SCALE

RINALDO RESIDENCE, Downers Grove, Illinois

Progressive Architecture

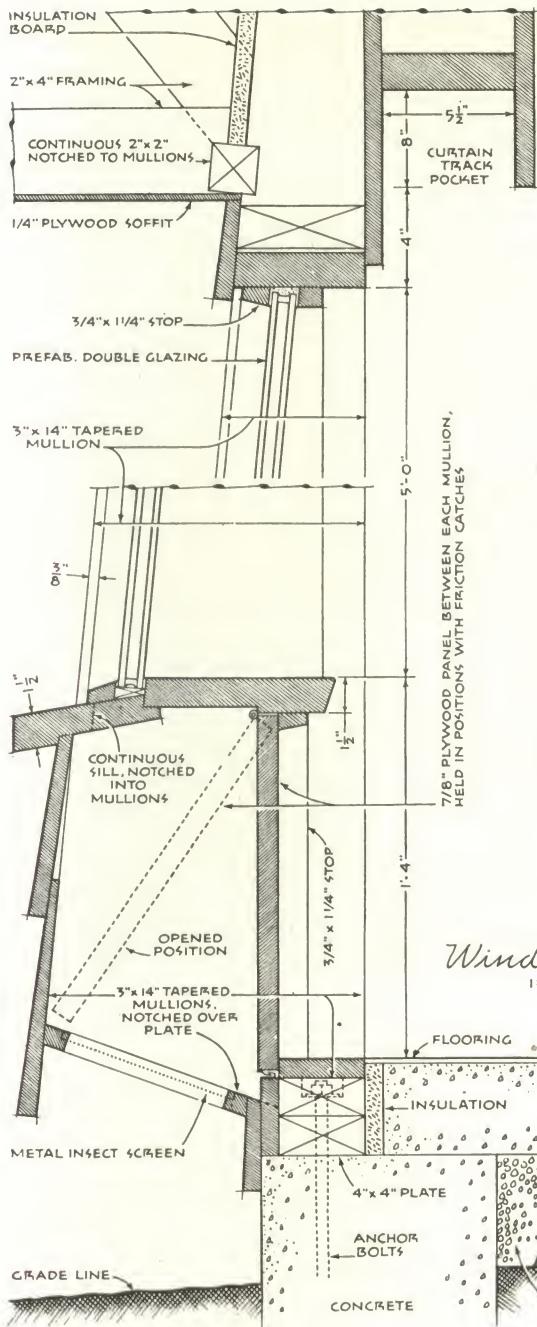
RESIDENCE: up-sliding window



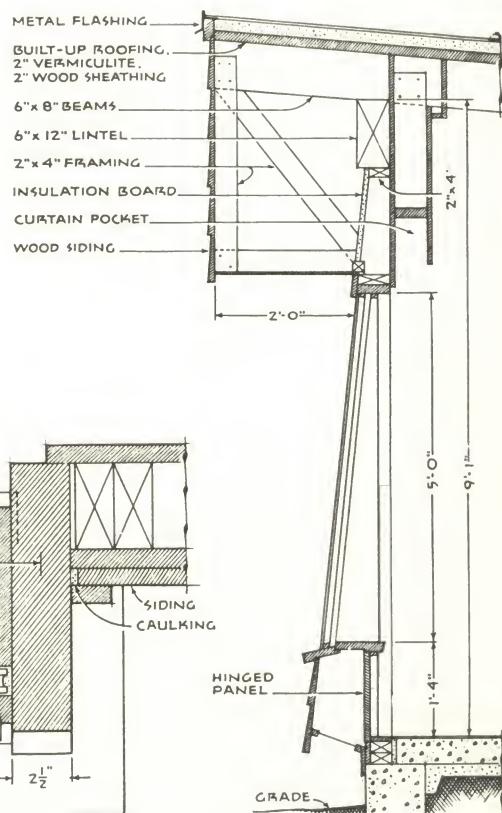
VAN WESEP RESIDENCE, Brewster, New York

CALEB HORNBOSTEL, ARCHITECT

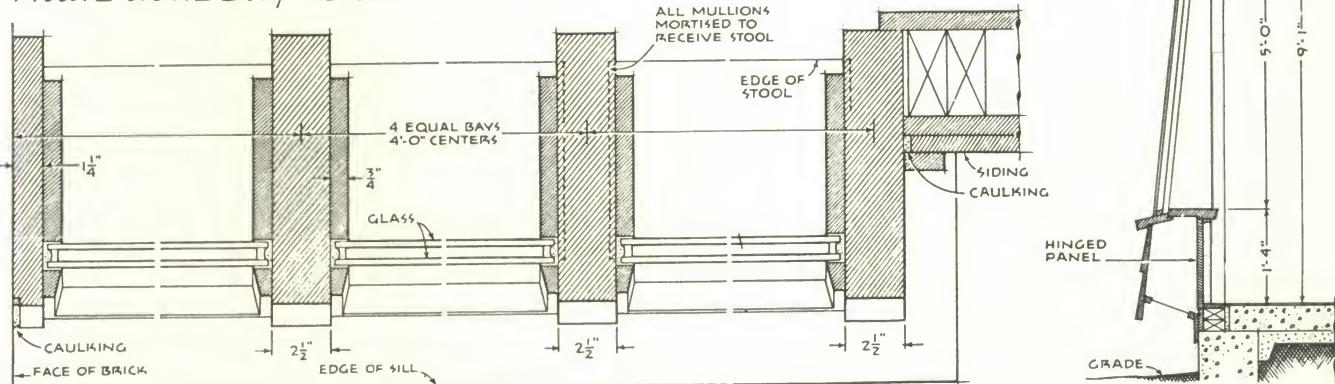
residence: in-sloping window



Wall Section 3/8" SCALE

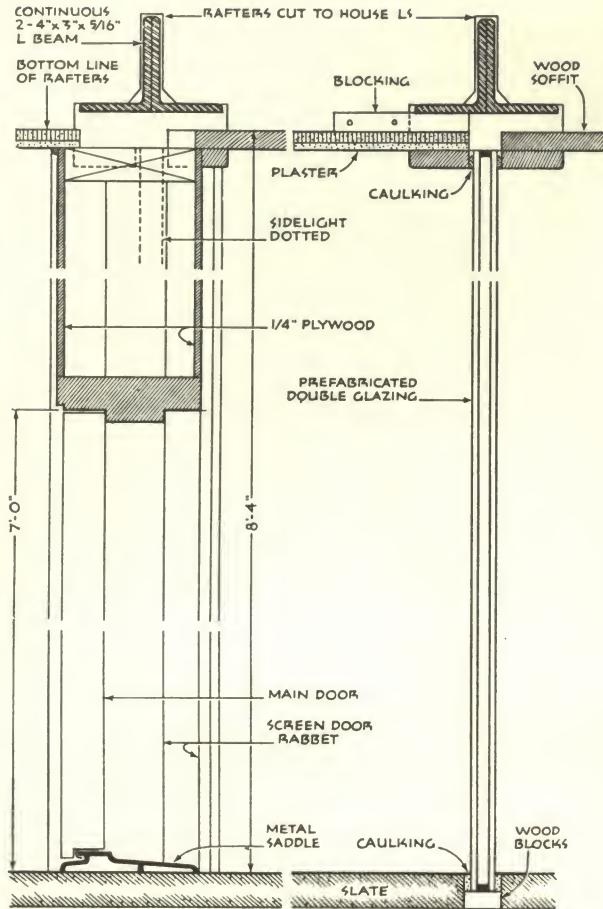


Plan thru Bay 1/2" SCALE

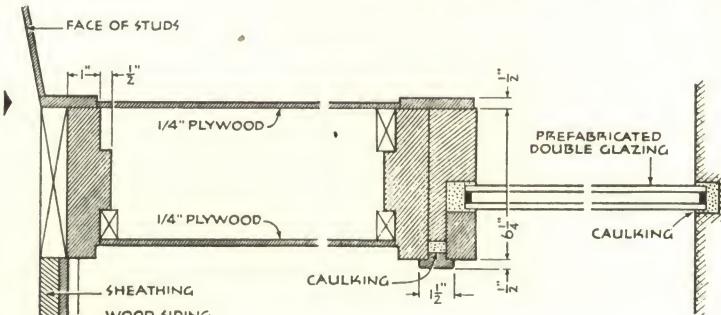
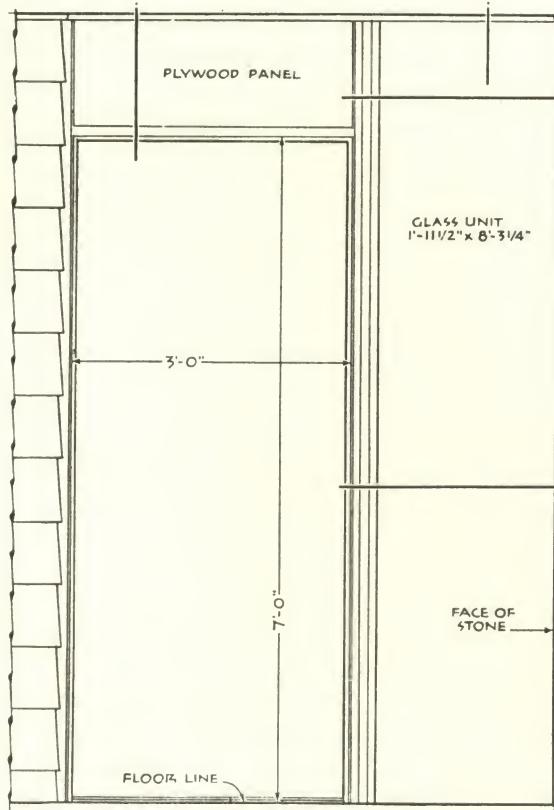


DONALD DAHLSTROM RESIDENCE, Deerfield, Ill.
Charles J. Wondreis, Designer

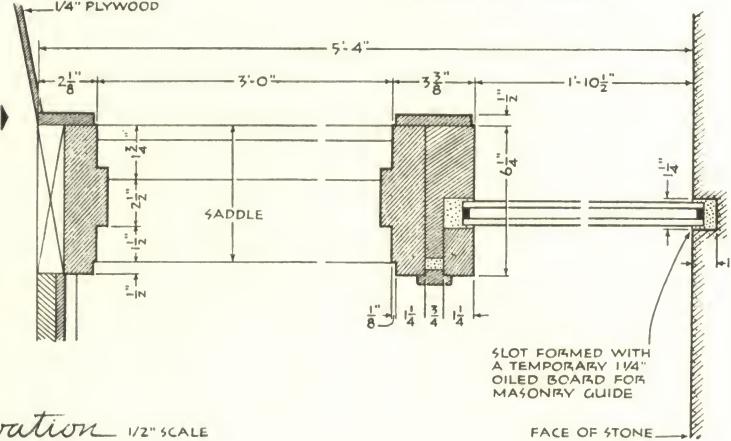
RESIDENT fixed prefab double-glazing



AD. PHOTO



Plans 1 1/2" SCALE



Elevation 1/2" SCALE

CLARK T. McCONNELL RESIDENCE, Cleveland, Ohio

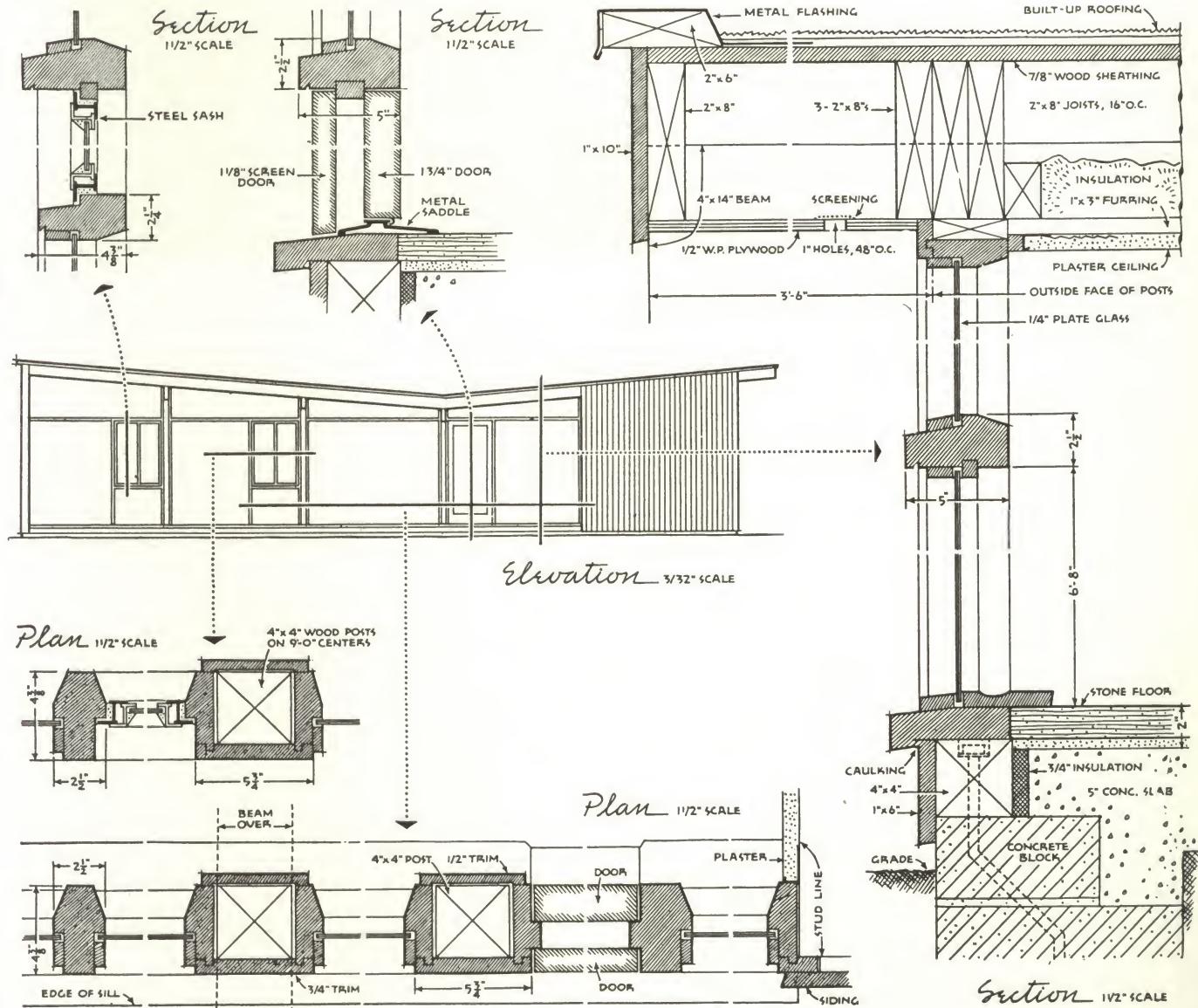
Progressive Architecture

ERNST PAYER, ARCHITECT

house: glass wall



RICHARD GARRISON



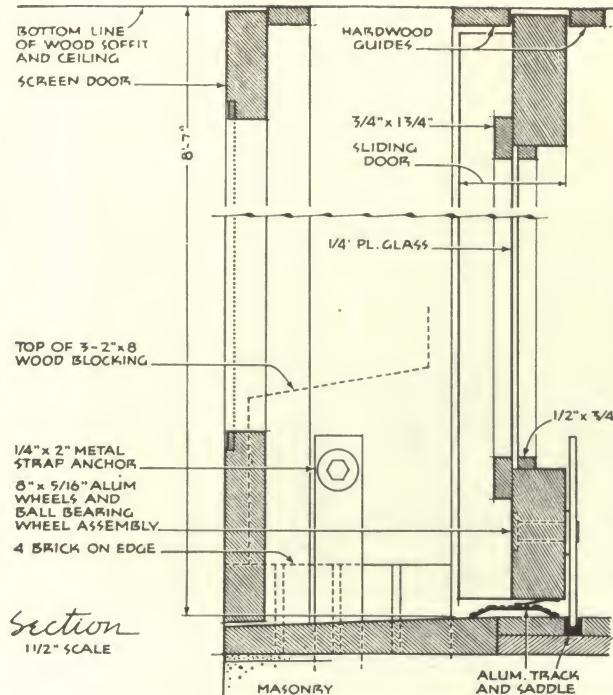
MORGAN HOUSE, Lincoln, Mass.

Hugh Stubbins, Jr., Architect

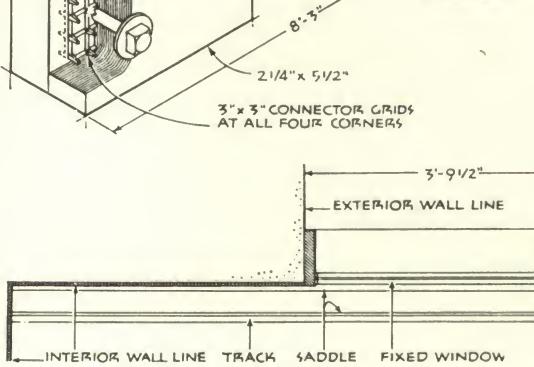
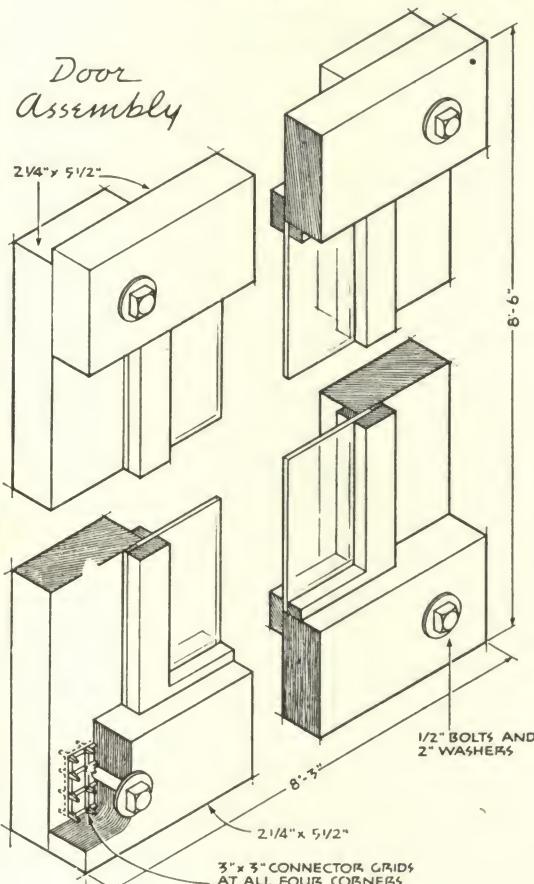
RESIDENCE wood sliding glass doors



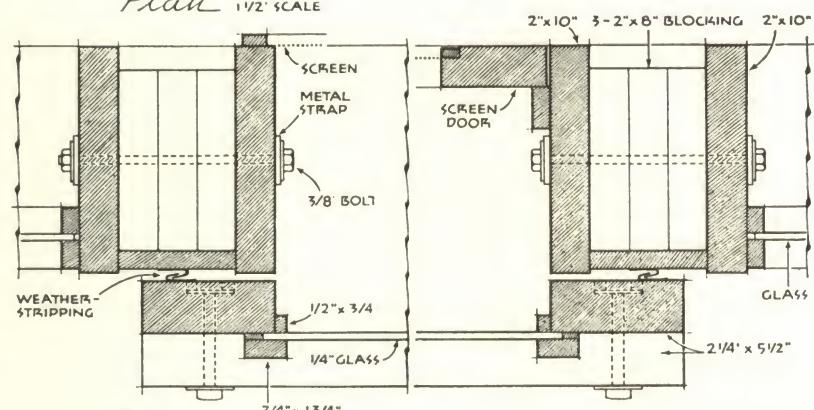
RADA PHOTOGRAPHY



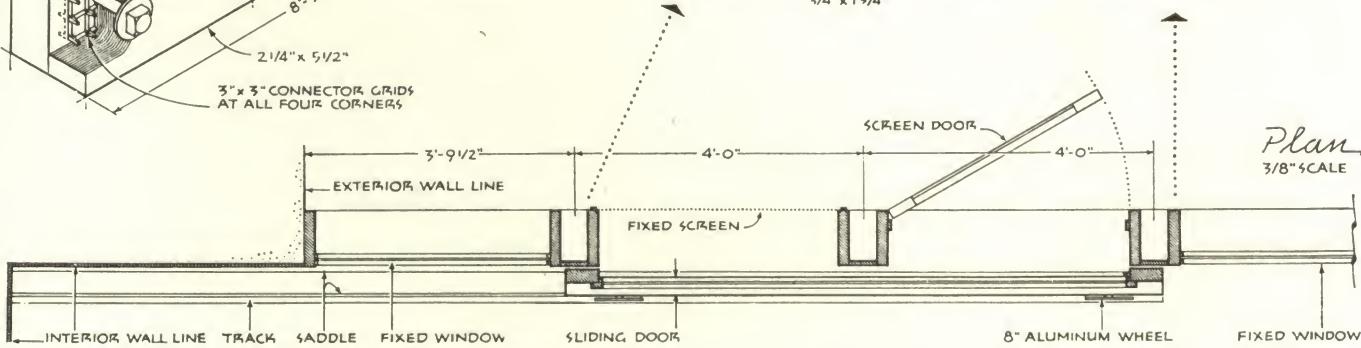
Section
1/2" SCALE



Plan 1/2" SCALE



Plan
3/8" SCALE



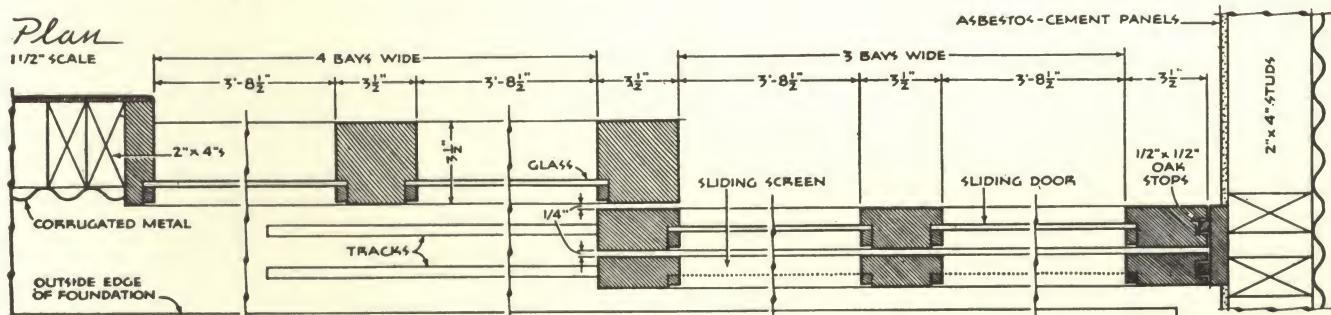
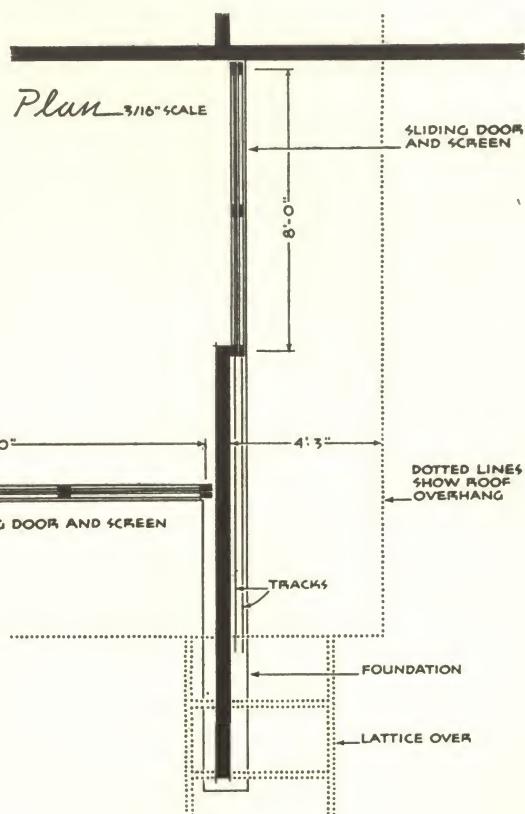
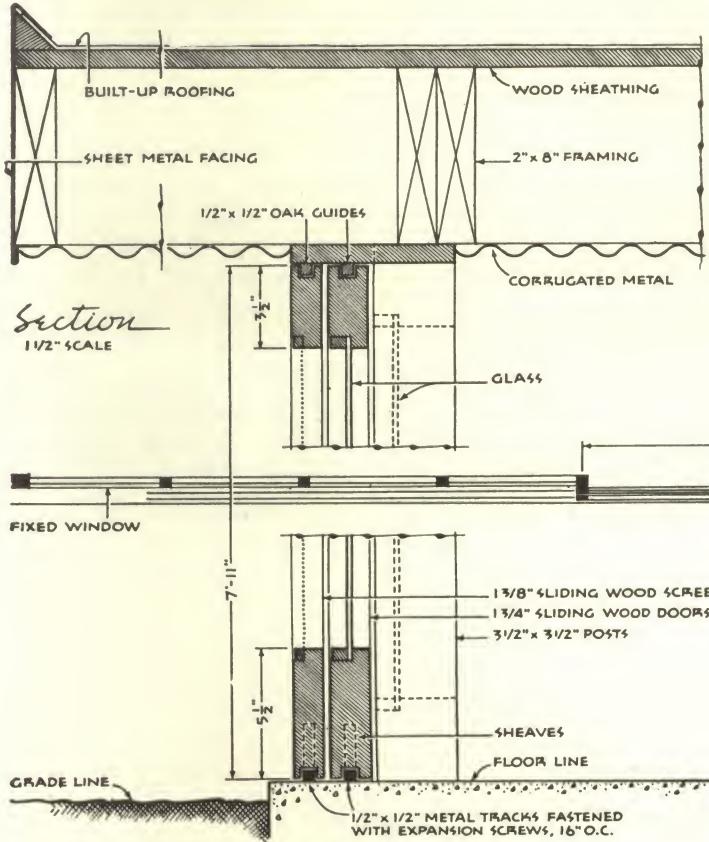
A. E. HOUCK RESIDENCE, Coral Gables, Florida

IGOR B. POLEVITZKY, ARCHITECT

residence: sliding doors



JULIUS SHULMAN



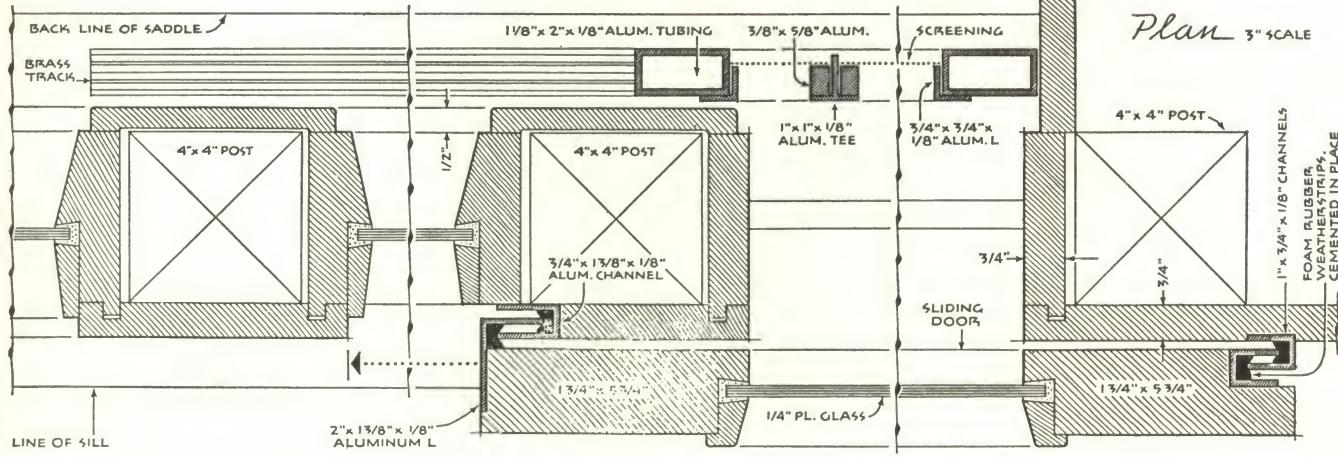
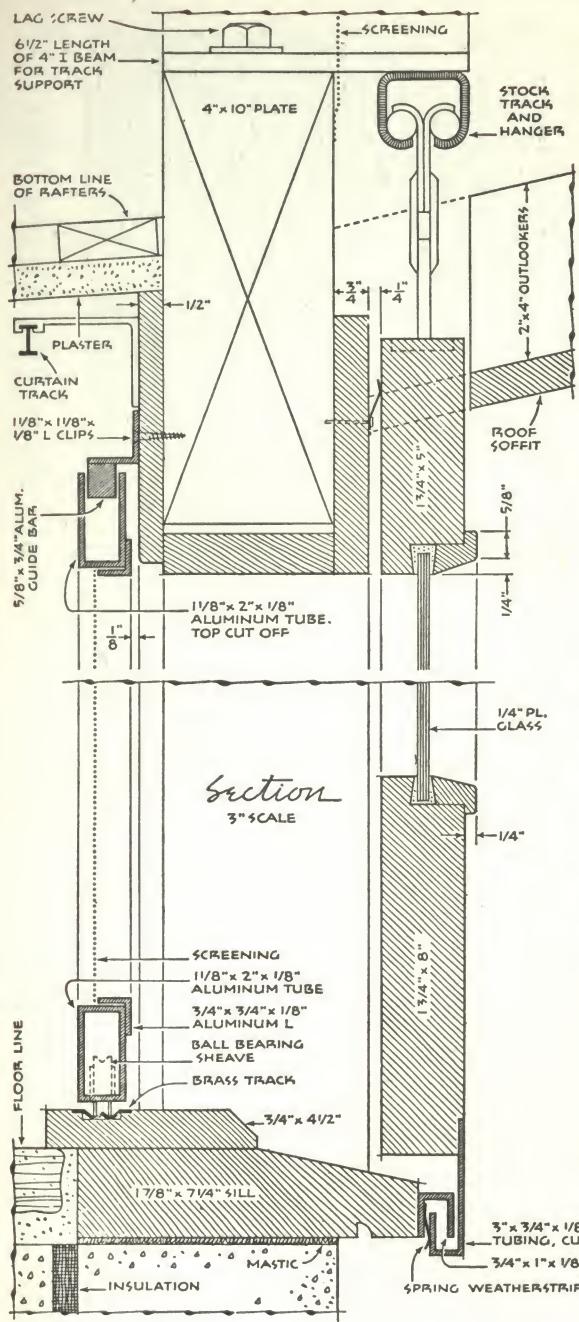
CLARK RESIDENCE, Palm Springs, Calif.

Clark & Frey, Architects

RESIDENCE: sliding glass doors



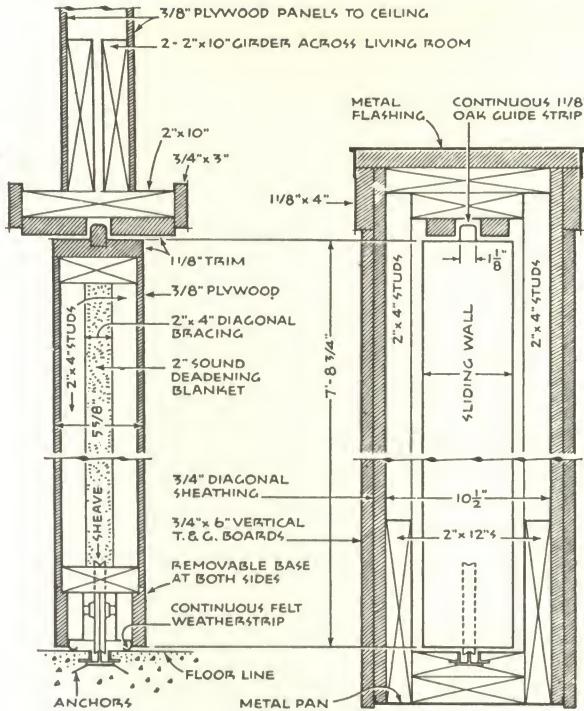
EZRA STOLLER : PICTOR



HUGH STUBBINS RESIDENCE, Lexington, Mass.

HUGH STUBBINS, ARCHITECT

residence: sliding wall



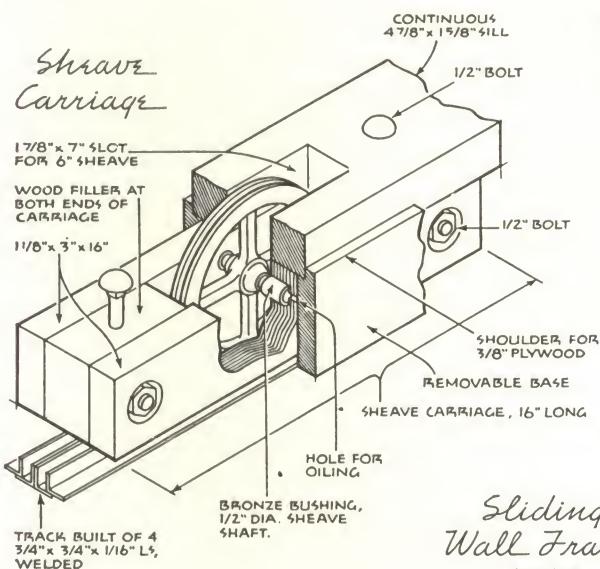
Interior and Exterior Sections

1" SCALE



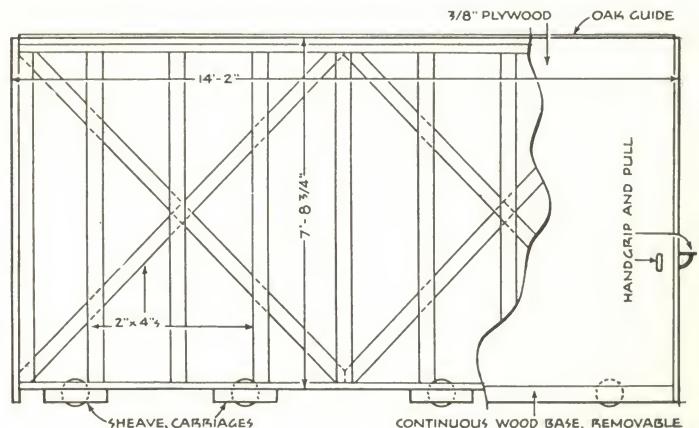
PHOTOS BY RICHARD A. MAURER

Sheave Carriage

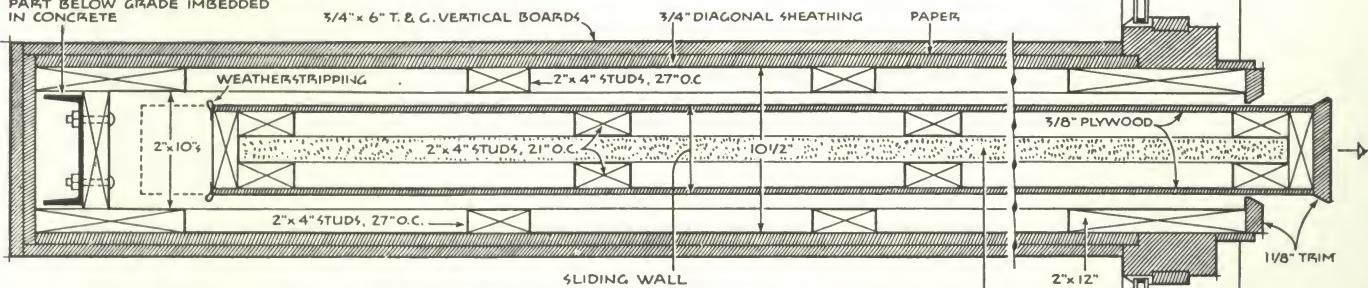


Sliding Wall Frame

1/4" SCALE



CONTINUOUS 7" CHANNEL FROM TOP OF WALL TO 5'-0" INTO GROUND. PART BELOW GRADE IMBEDDED IN CONCRETE



Plan thru Pocket 1" SCALE

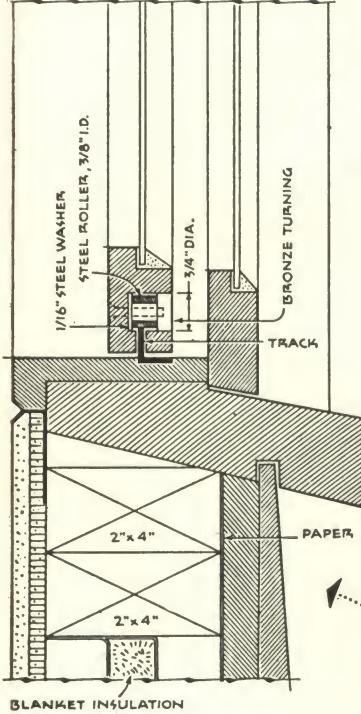
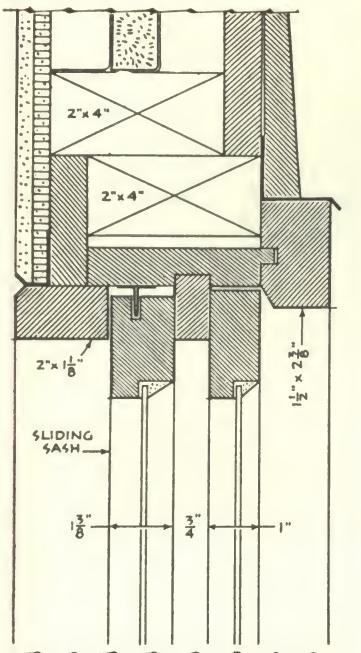
BRIGGS RESIDENCE, Ithaca, N. Y.

Wells & Canfield, Architects

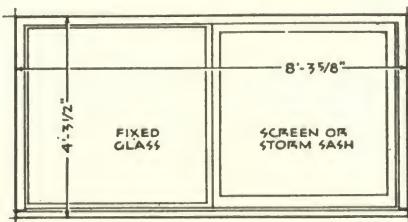
RESIDENCE: sliding window



GEORGE M. CUSHING JR.

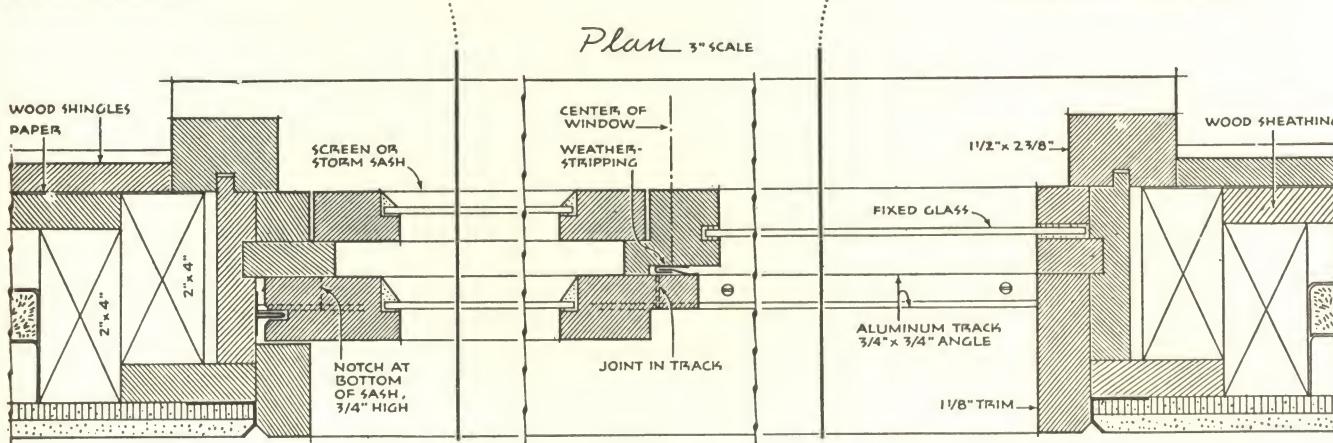
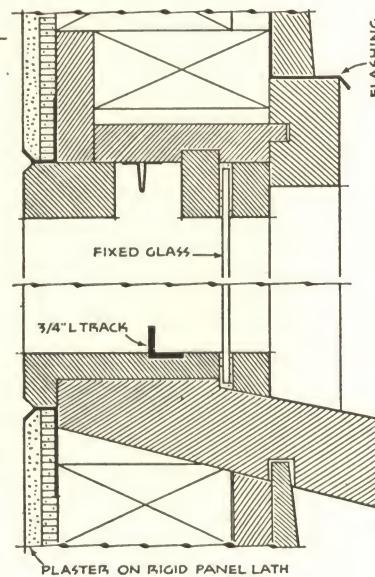


Section
3" SCALE



Elevation (Exterior)

Section
3" SCALE

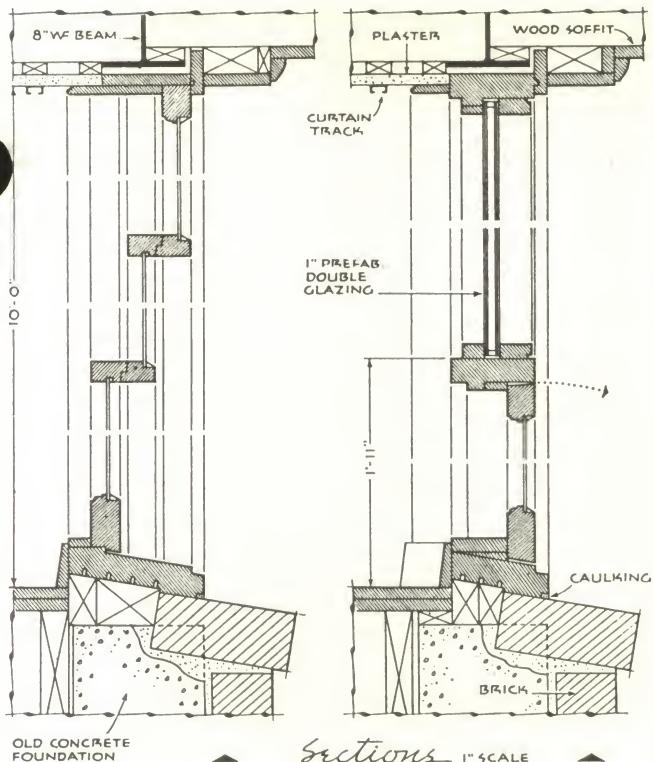


HOOPER RESIDENCE, Dedham, Mass.

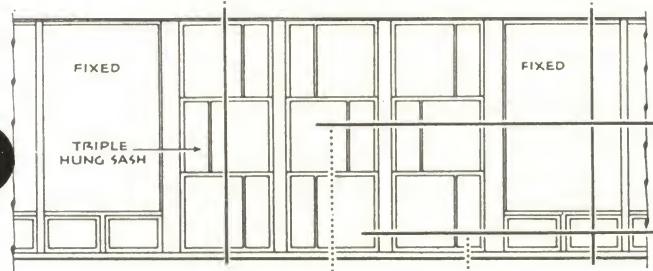
Progressive Architecture

ROBERT WOODS KENNEDY, ARCHITECT

RESIDENCE: window wall (triple-hung sash)

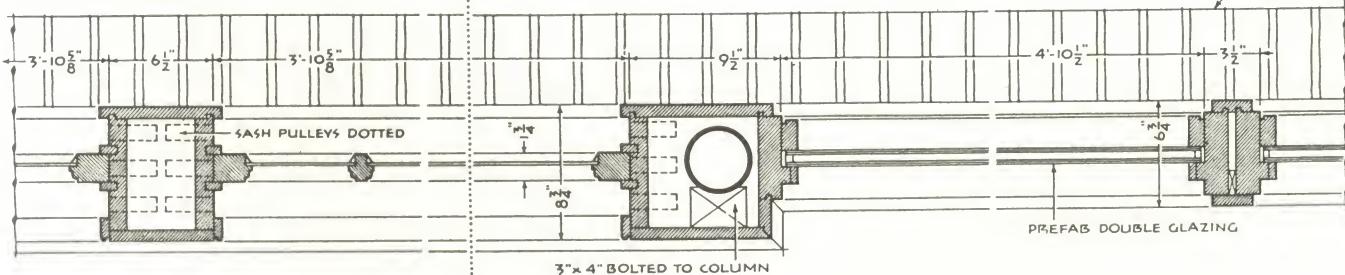


Sections 1" SCALE

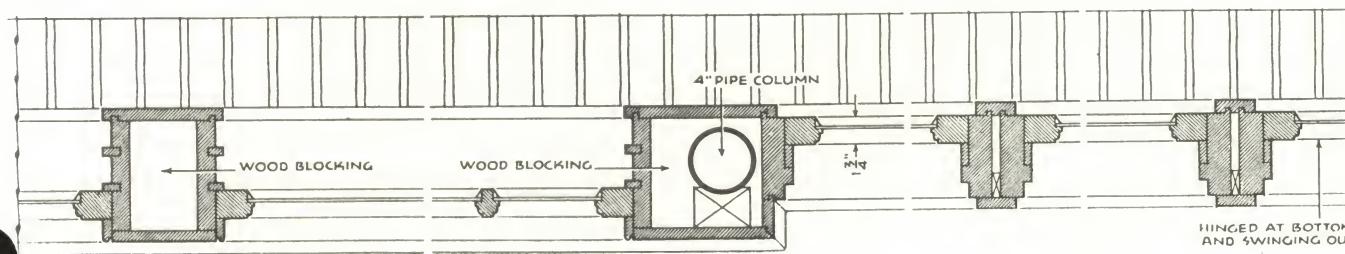


Elevation 1/8" SCALE

Plan 1" SCALE



Plan 1" SCALE

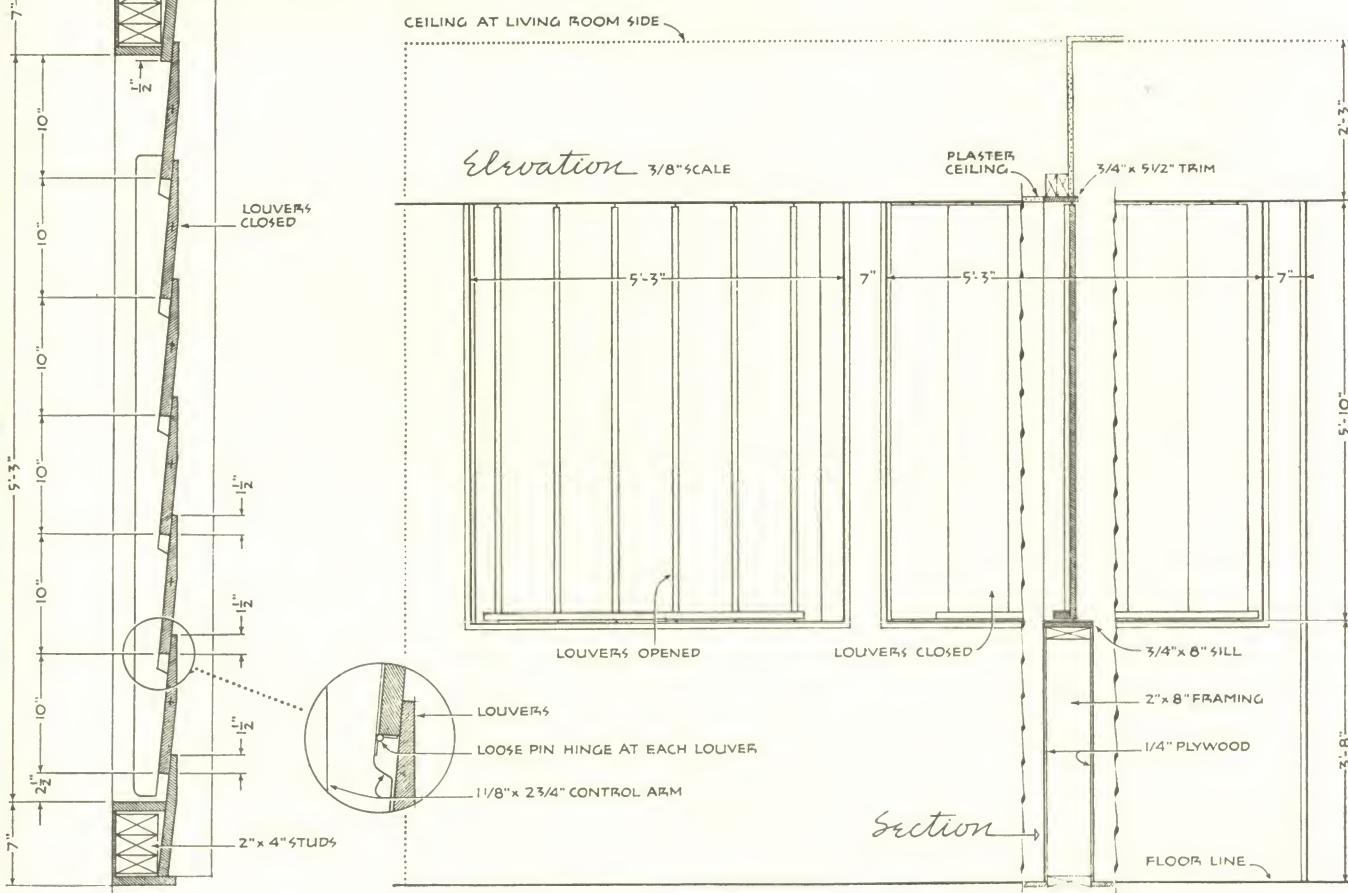
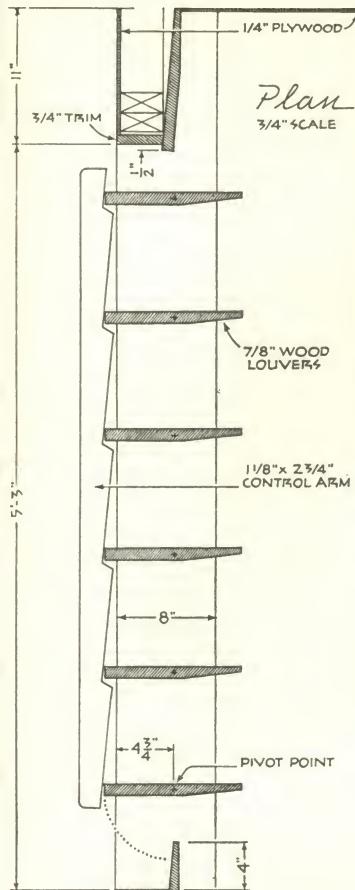


PIAGET STUDIO

HEADMASTER'S RESIDENCE, COUNTRY DAY SCHOOL, St. Louis, Mo.

FREDERICK DUNN, ARCHITECT

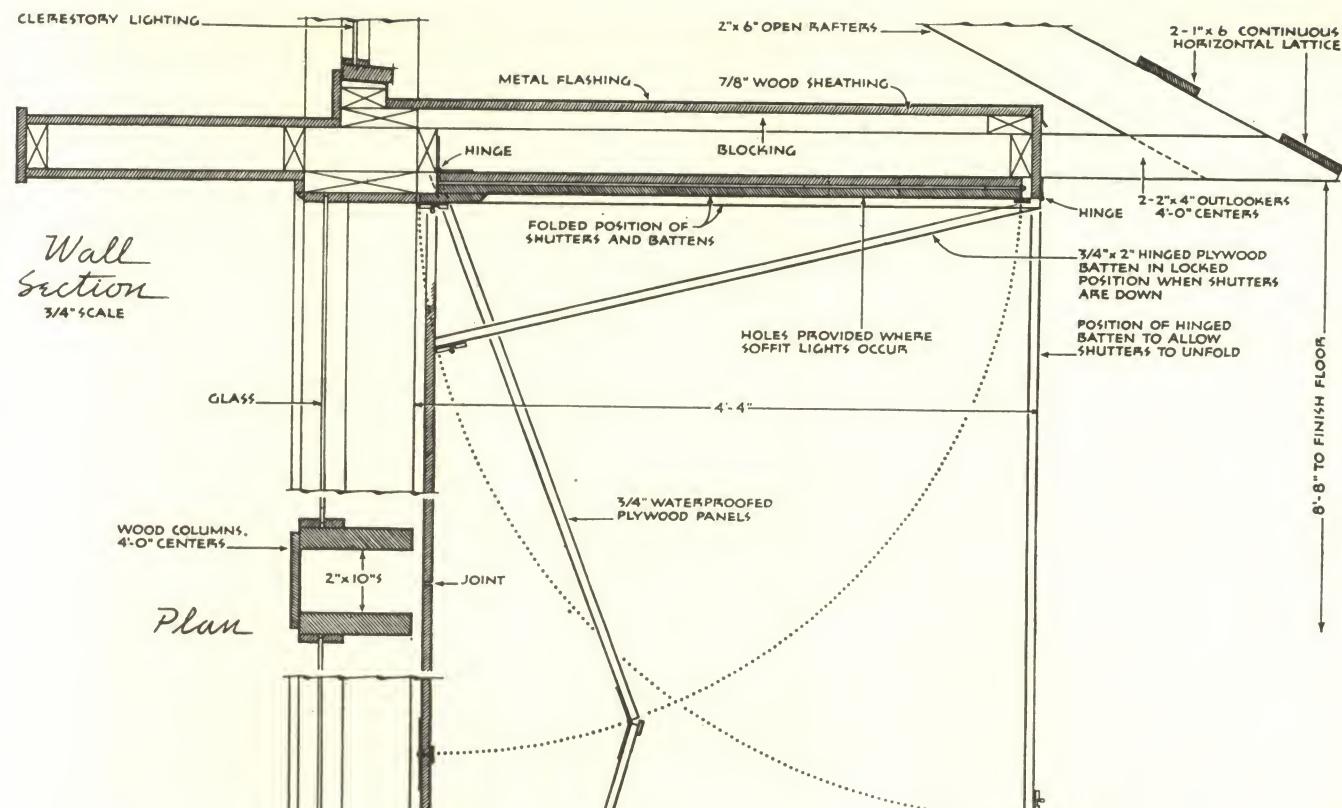
RESIDENCE: adjustable interior louvers



DORT RESIDENCE, Washington, D. C.

JEAN P. TROUCHAUD, DESIGNER

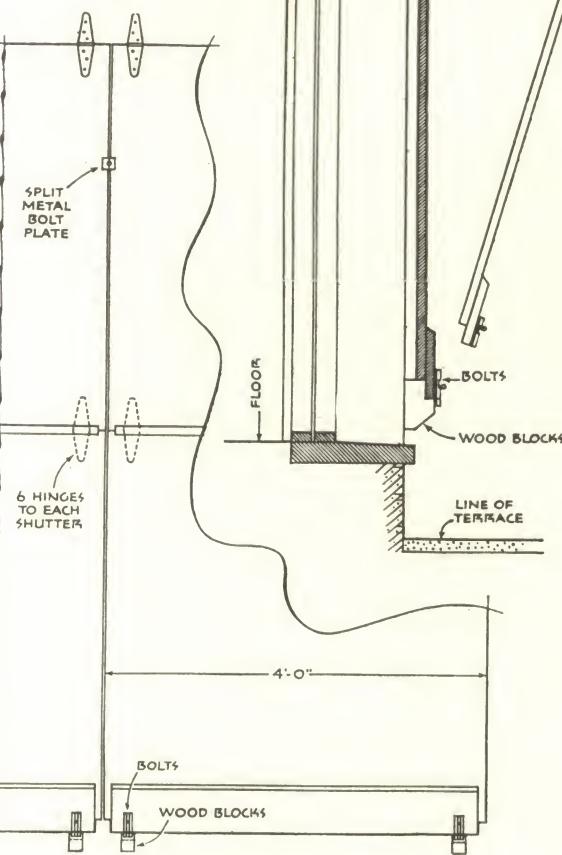
RESIDENCE: protective shutters



Plan

Shutter Elevation

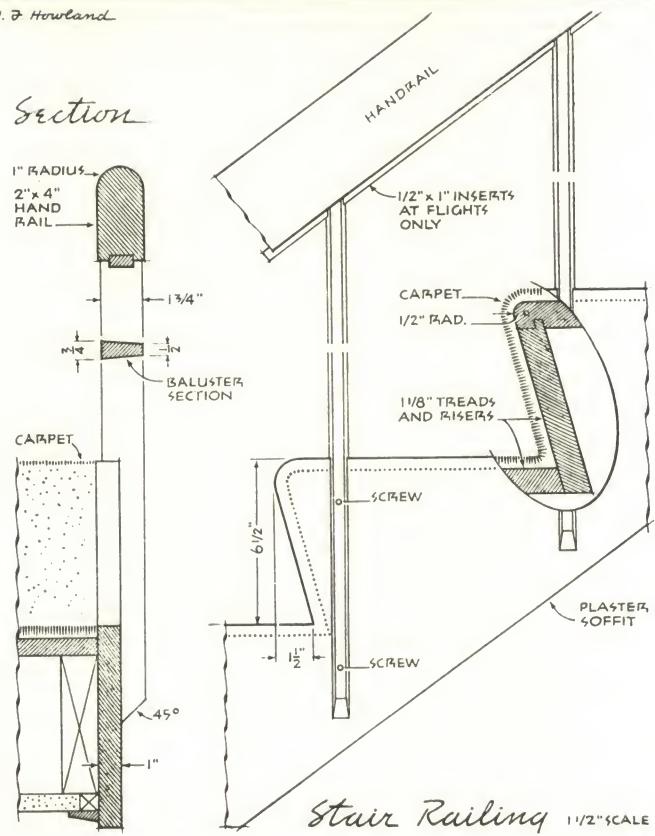
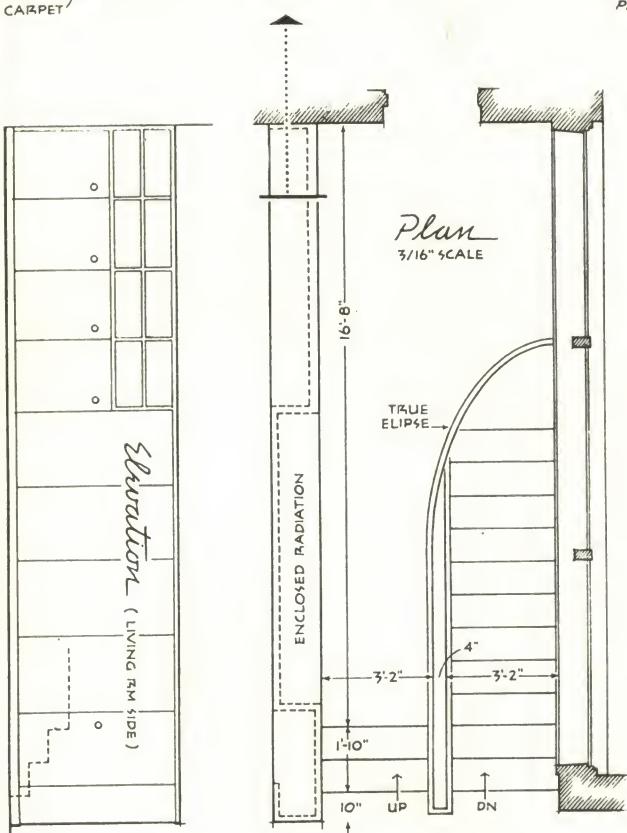
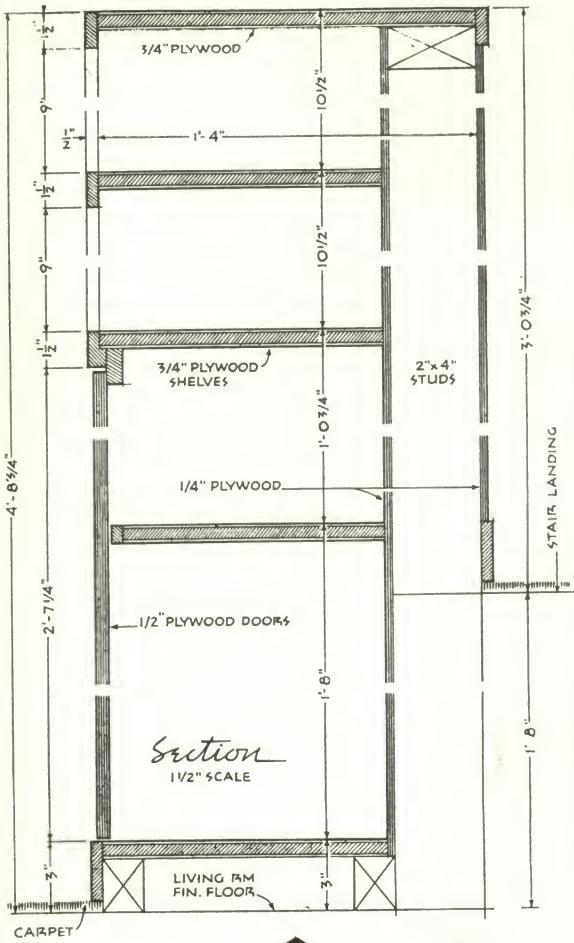
1/2" SCALE



ALBERT E. HOUCK RESIDENCE, Coral Gables, Florida

IGOR POLEVITZKY ARCHITECT

HOUSE: storage cabinet and stair



PAINTER RESIDENCE
Kittanning, Pennsylvania

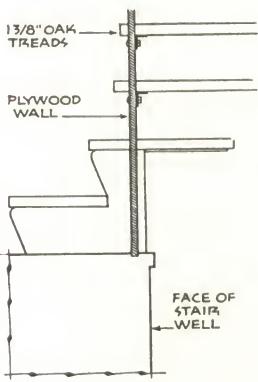
Progressive Architecture

CALEB HORNBOSTEL
Architect

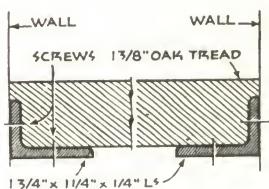
residence: stair detail



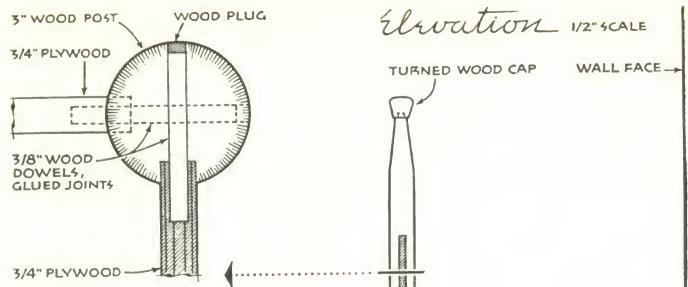
RODNEY MCKAY MORGAN



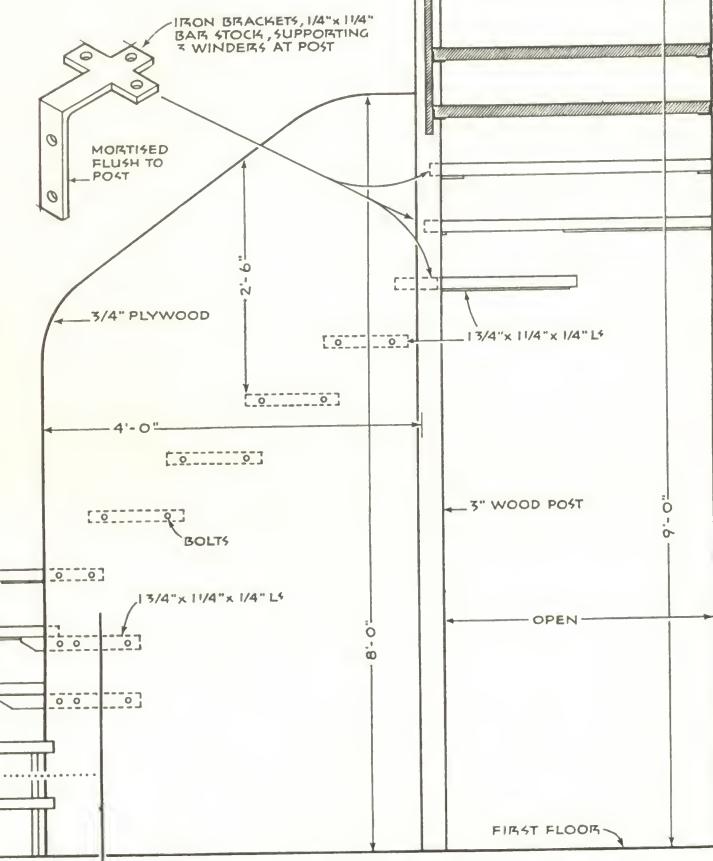
Section V2" SCALE



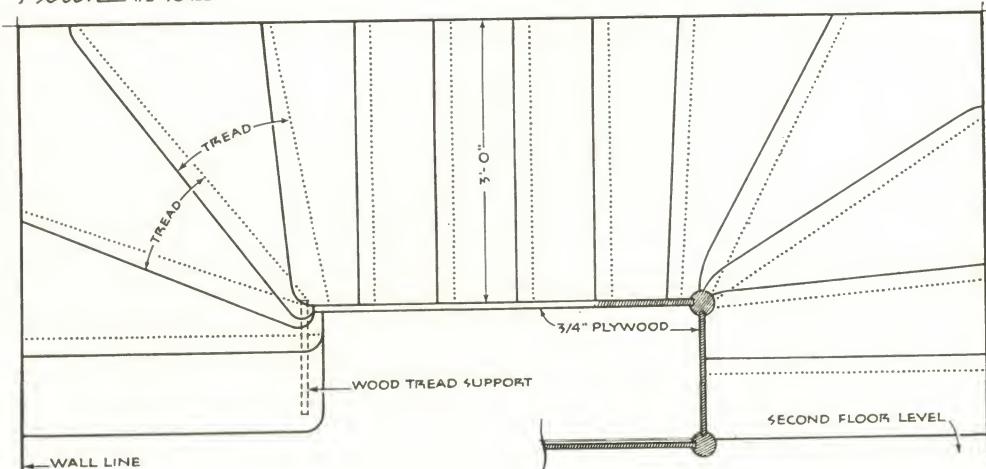
Typical Trrad
Support 3" SCALE



Plan at Post 3" SCALE



Plan 1/2" SCALE



MANFRED PAYER RESIDENCE, Morristown, N. J.

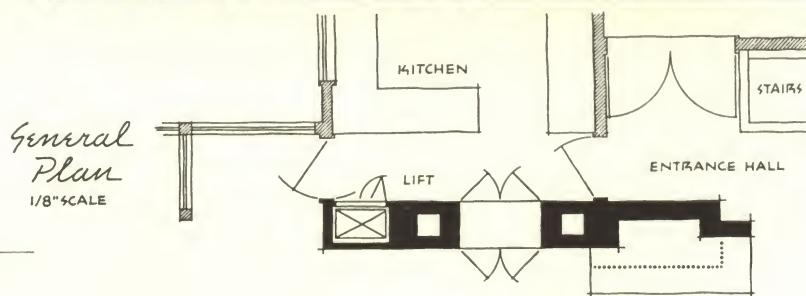
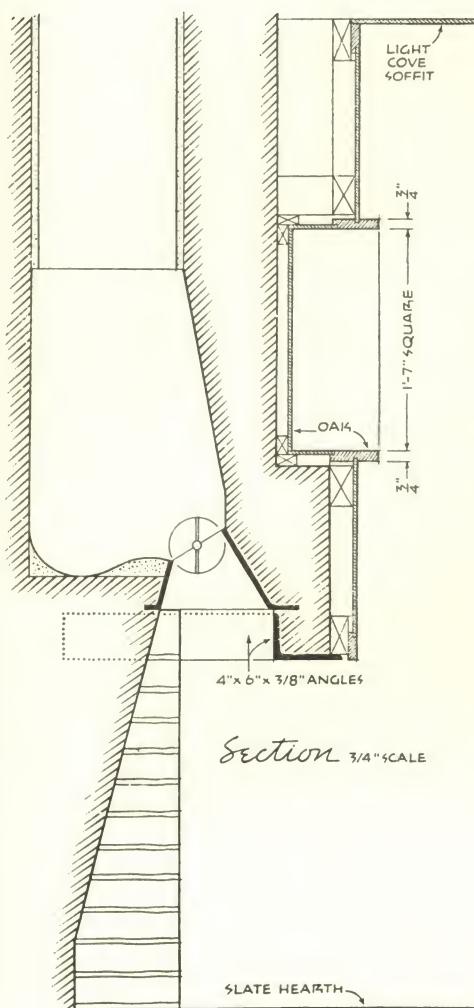
Ernst Payer, Architect

Selected Details

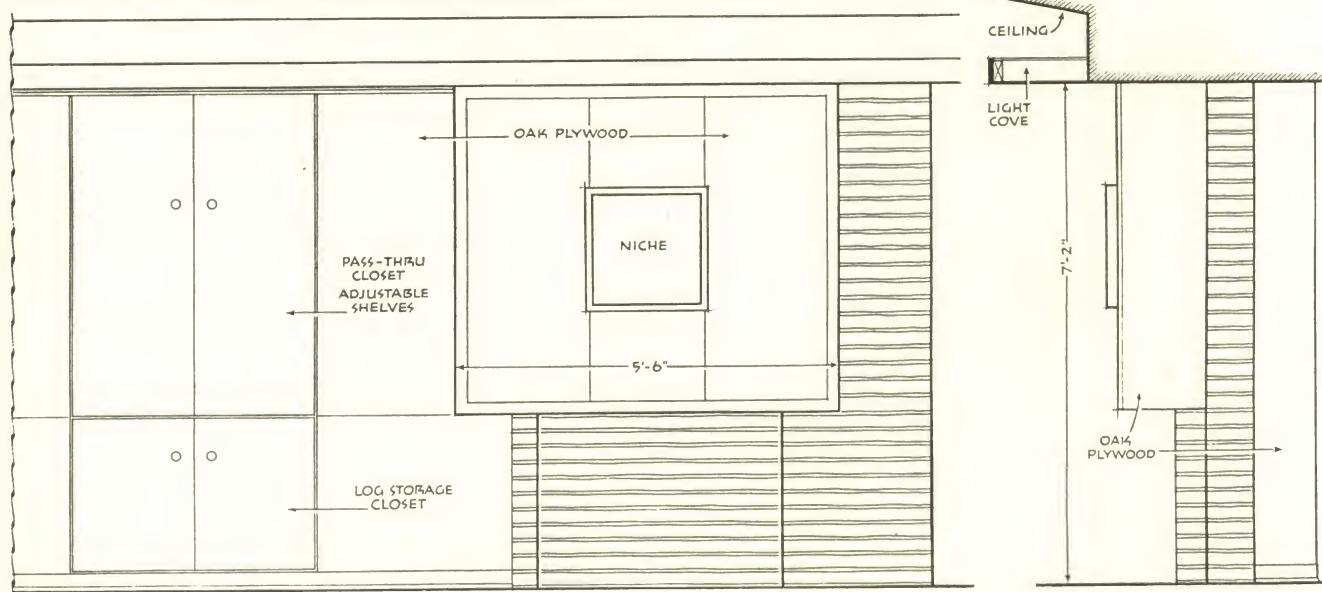


HOUSE: CABINET WALL

Rodney McCay Morgan



Front and End Elevations 3/8" SCALE



ERIC SEVAREID HOUSE

Alexandria, Virginia

CHARLES M. GOODMAN

ARCHITECT

Selected Details



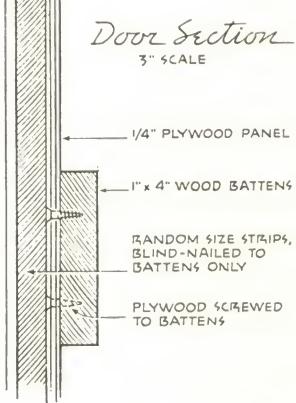
HOUSE: CABINET WALL



Multi-Section

Door Section

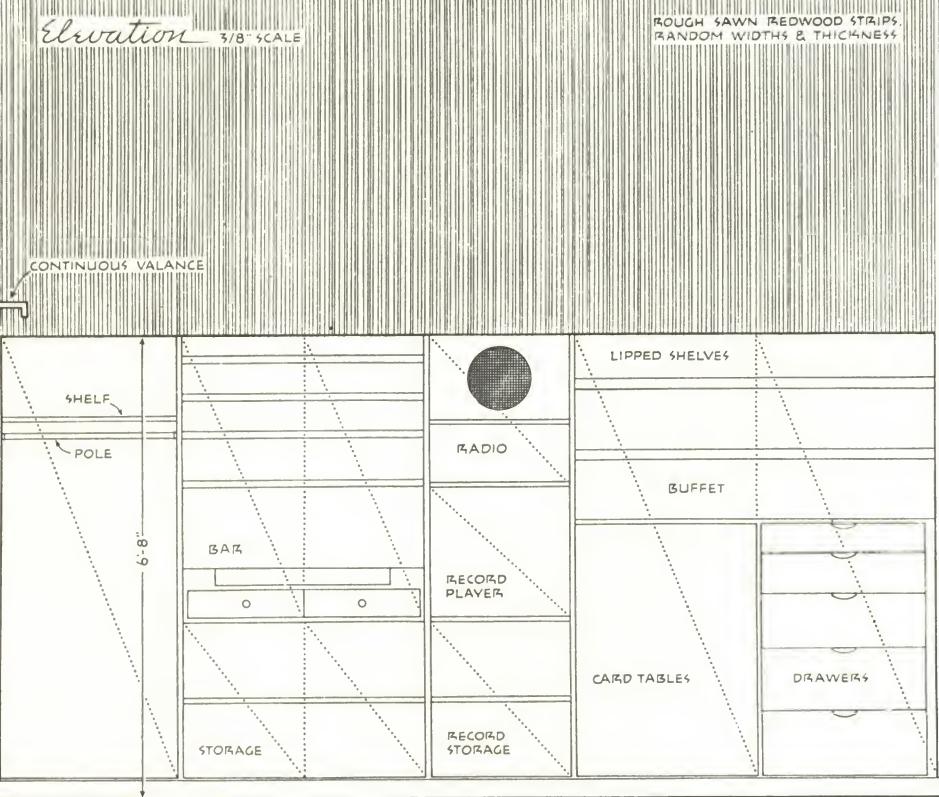
3" SCALE



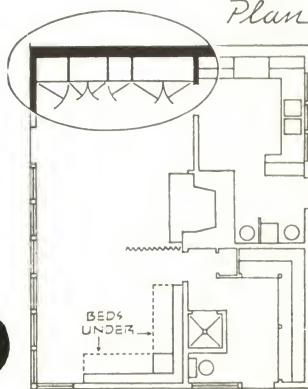
Elevation

3/8" SCALE

ROUGH SAWN REDWOOD STRIPS,
RANDOM WIDTHS & THICKNESS



Plan



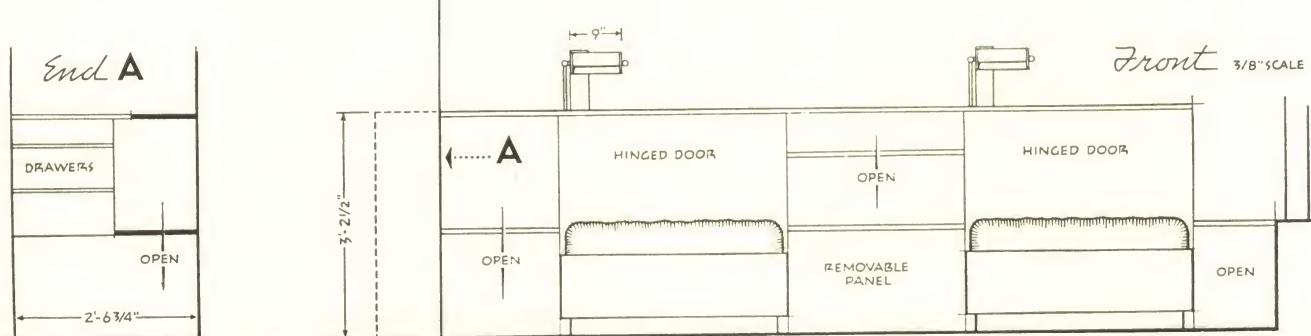
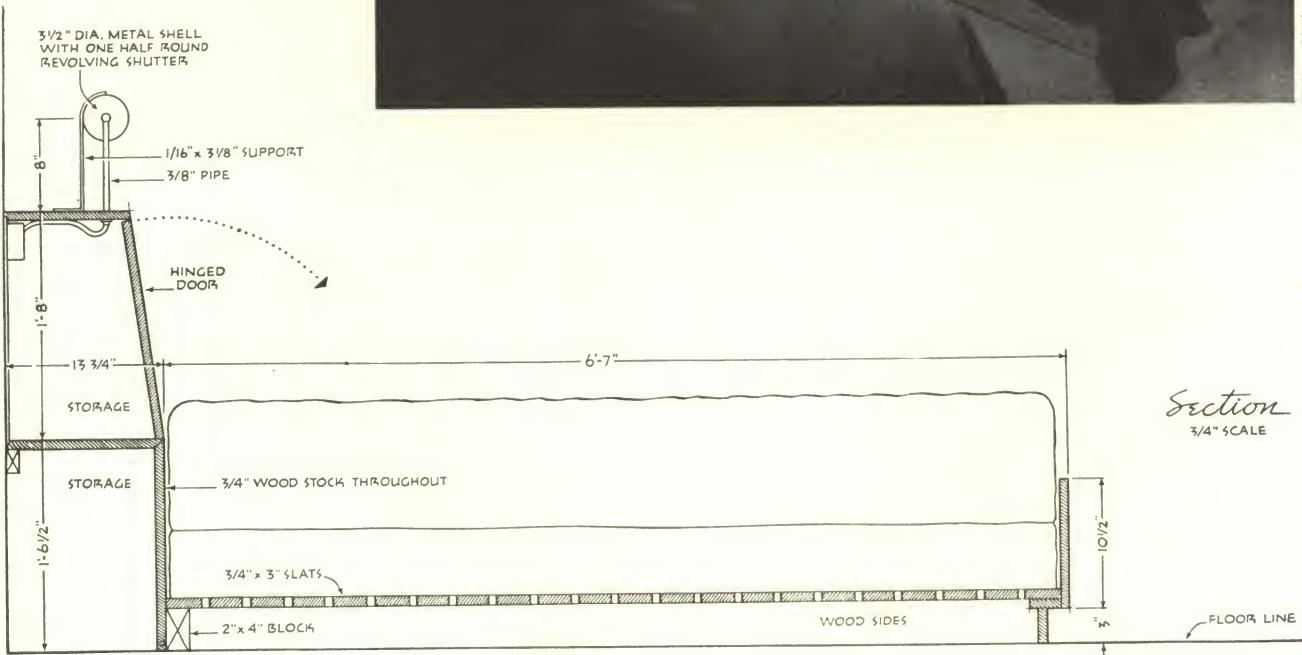
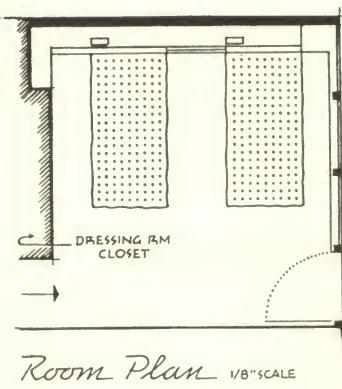
COINTE RESIDENCE
Hollywood, California

HAROLD J. BISSNER
Architect

Selected Details

A

HOUSE: BUILT-IN BEDS

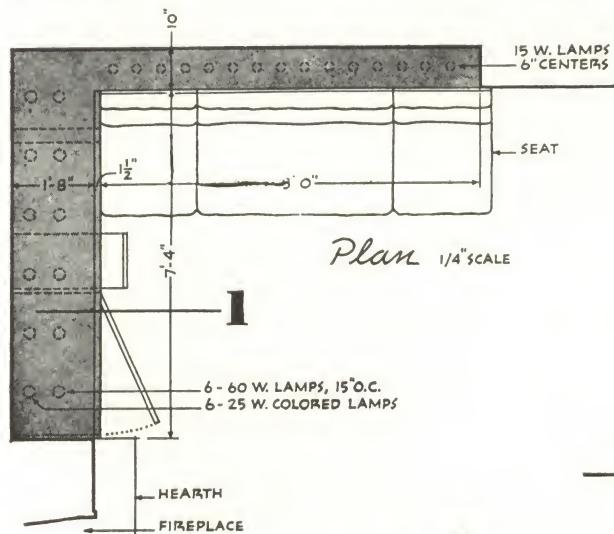


WARING-LEWIS HOUSE

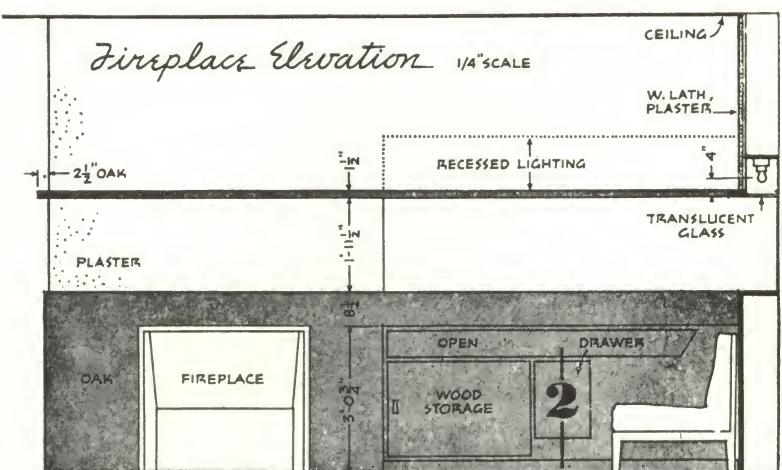
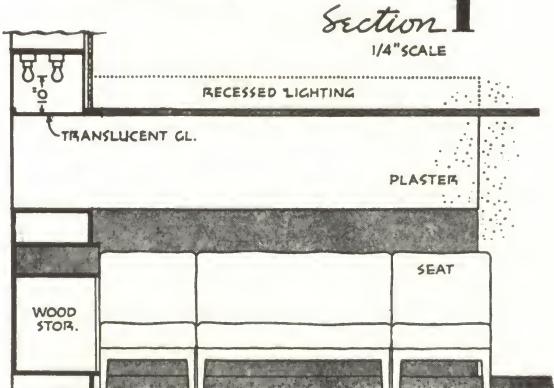
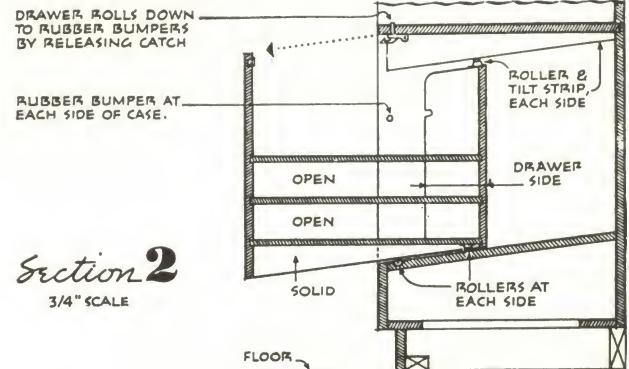
Los Angeles, California

RAPHAEL SORIANO

Designer



Section 1
1/4" SCALE

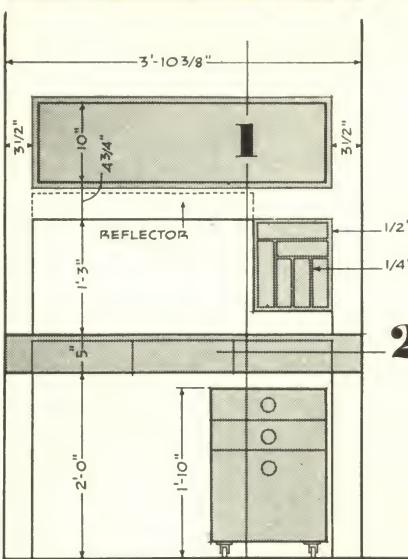


BUILT-IN FURNITURE

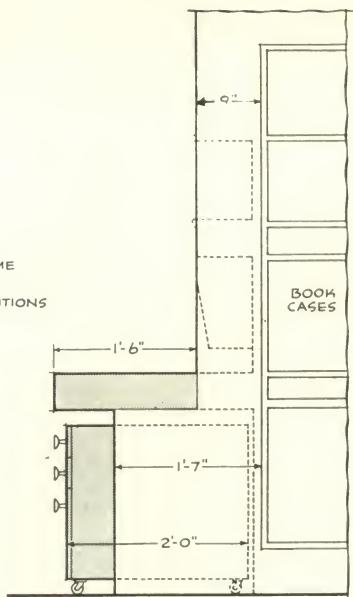
RESIDENCE near Chicago, Ill.

Progressive Architecture

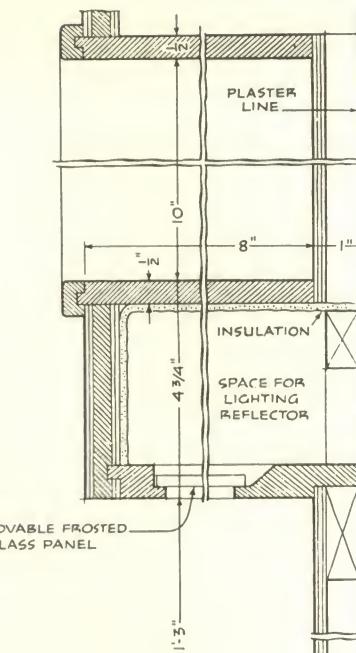
McSTAY JACKSON CO., Designers



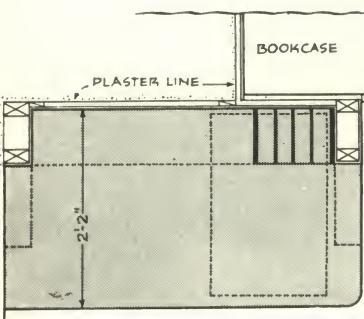
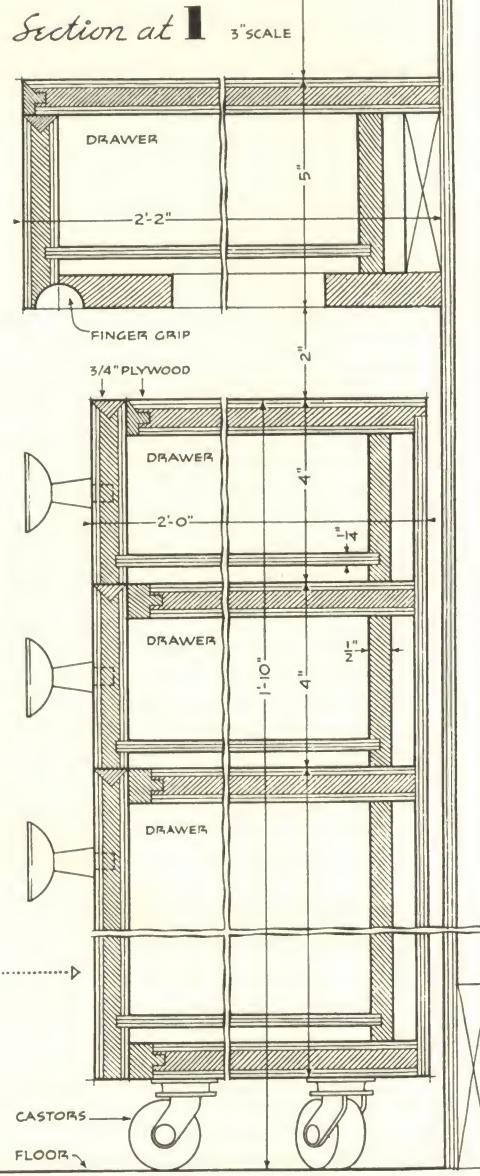
Front 1/2" SCALE



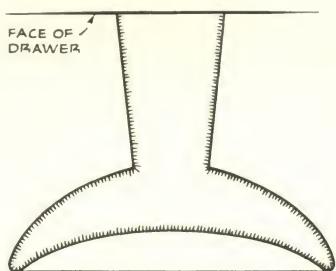
Side 1/2" SCALE



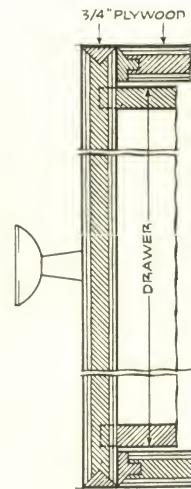
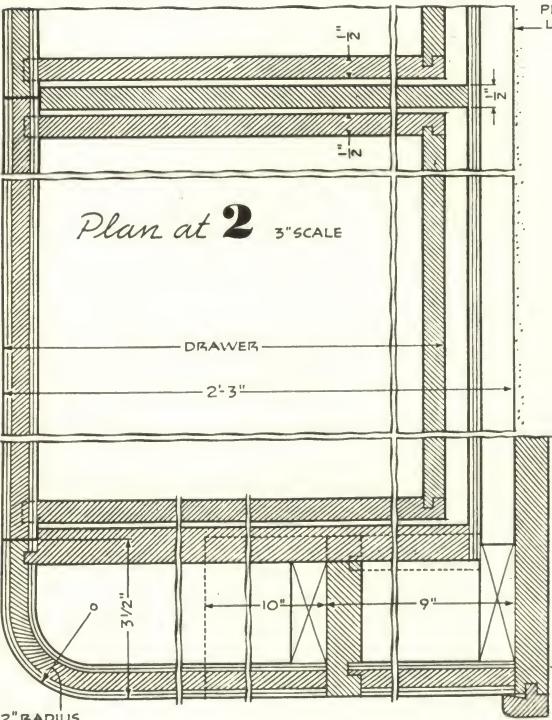
Section at 1



Plan 1/2" SCALE



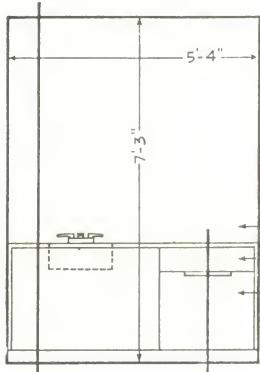
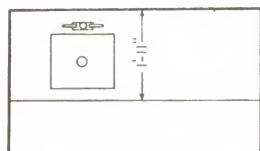
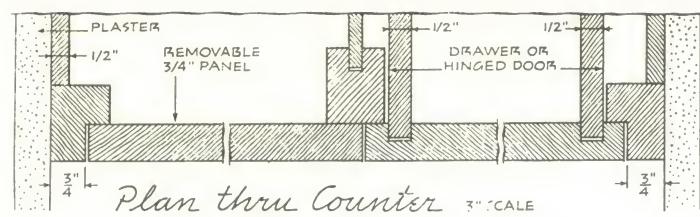
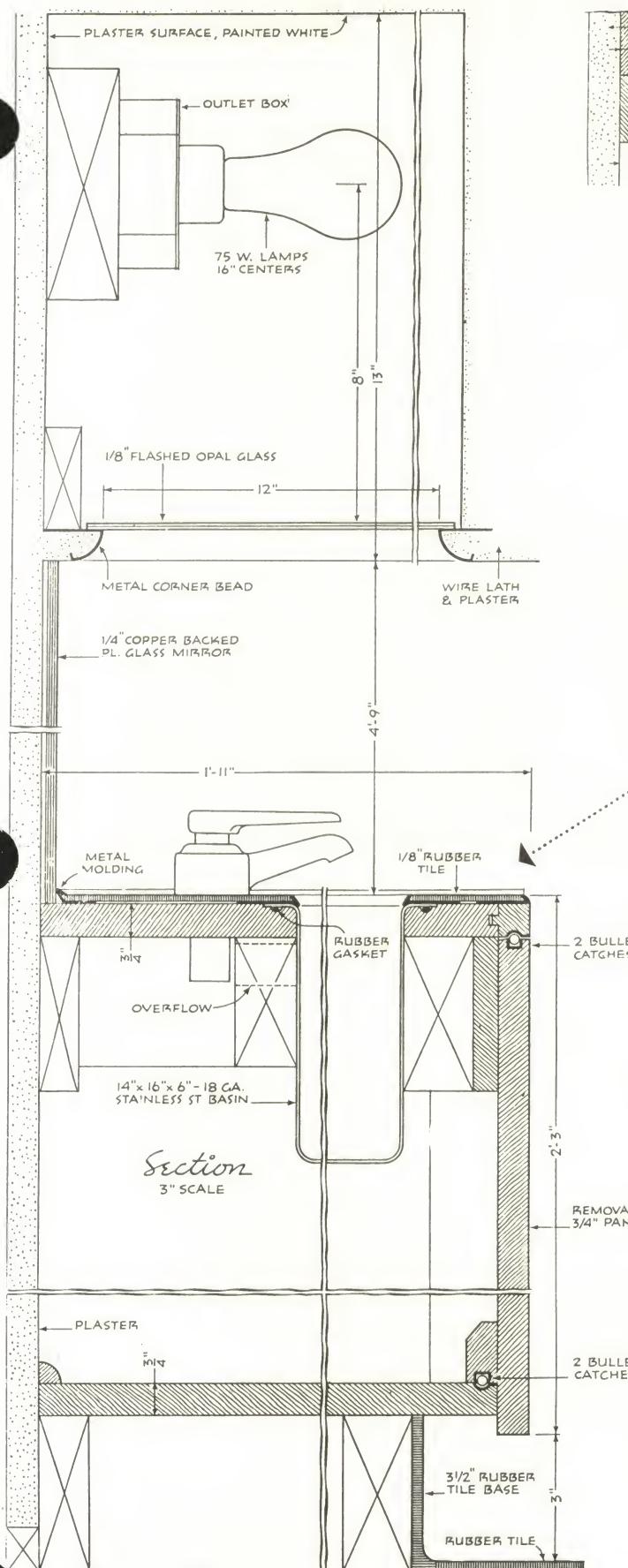
Drawer Pull FULL SIZE



Plan

STUDY CORNER

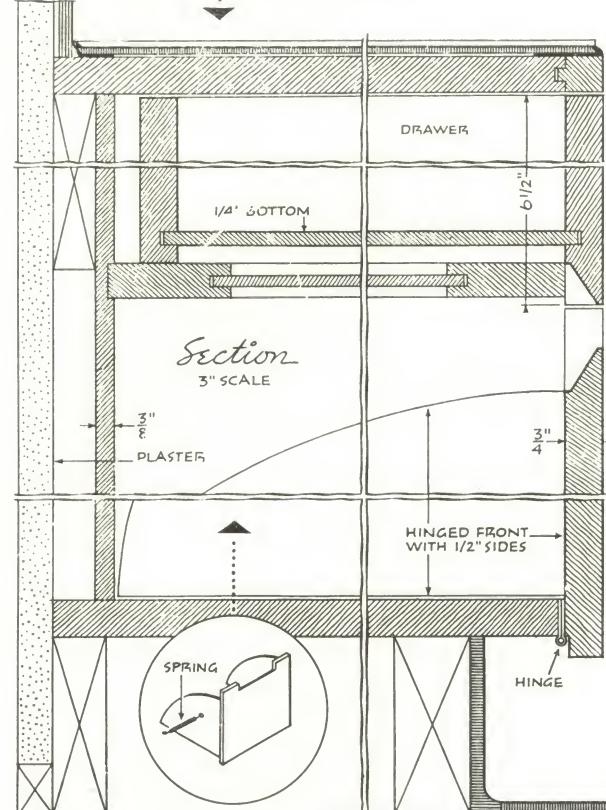
(PHOTO on preceding page)



Plan

Elevation
1/4" SCALE

Section



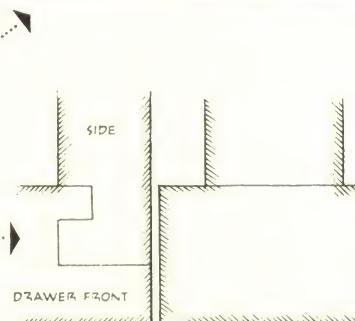
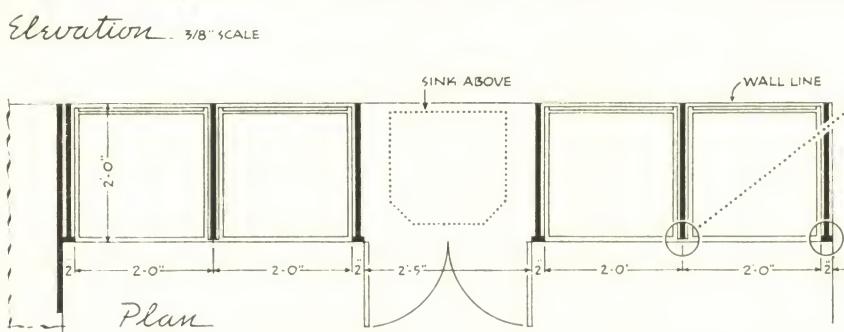
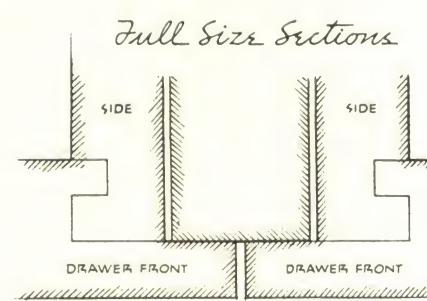
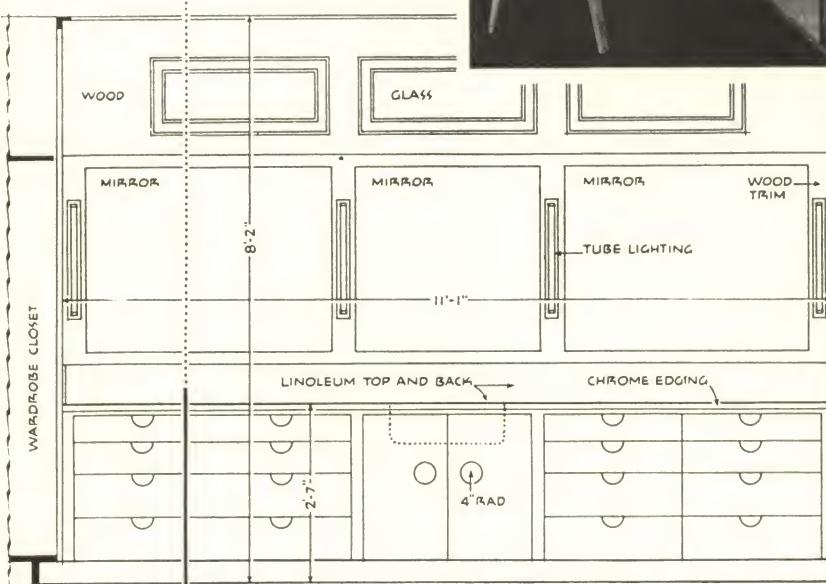
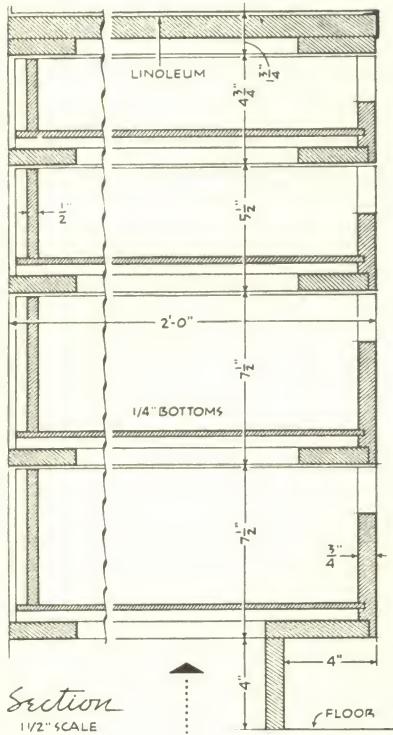
BUILT-IN LAVATORY, MIRROR, AND LIGHTING FIXTURE

McSTAY JACKSON CO., Designers
Chicago, Ill.

Selected Details

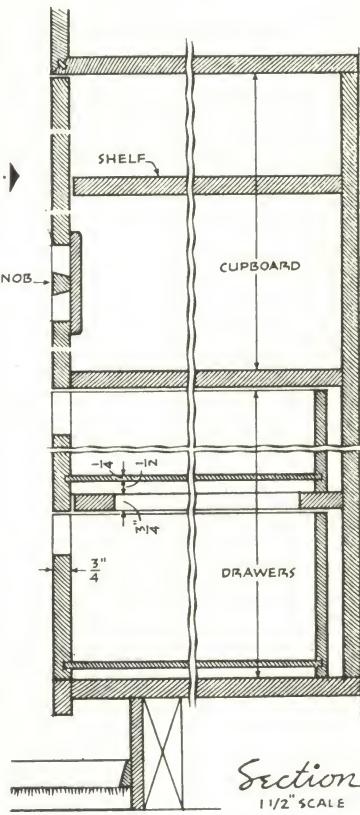
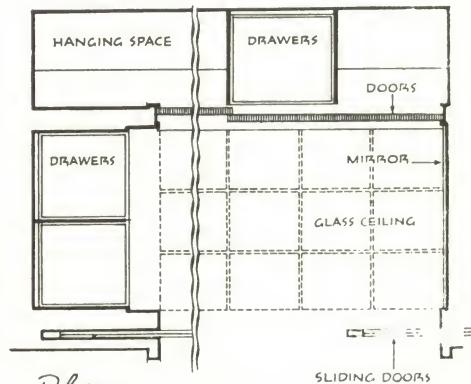
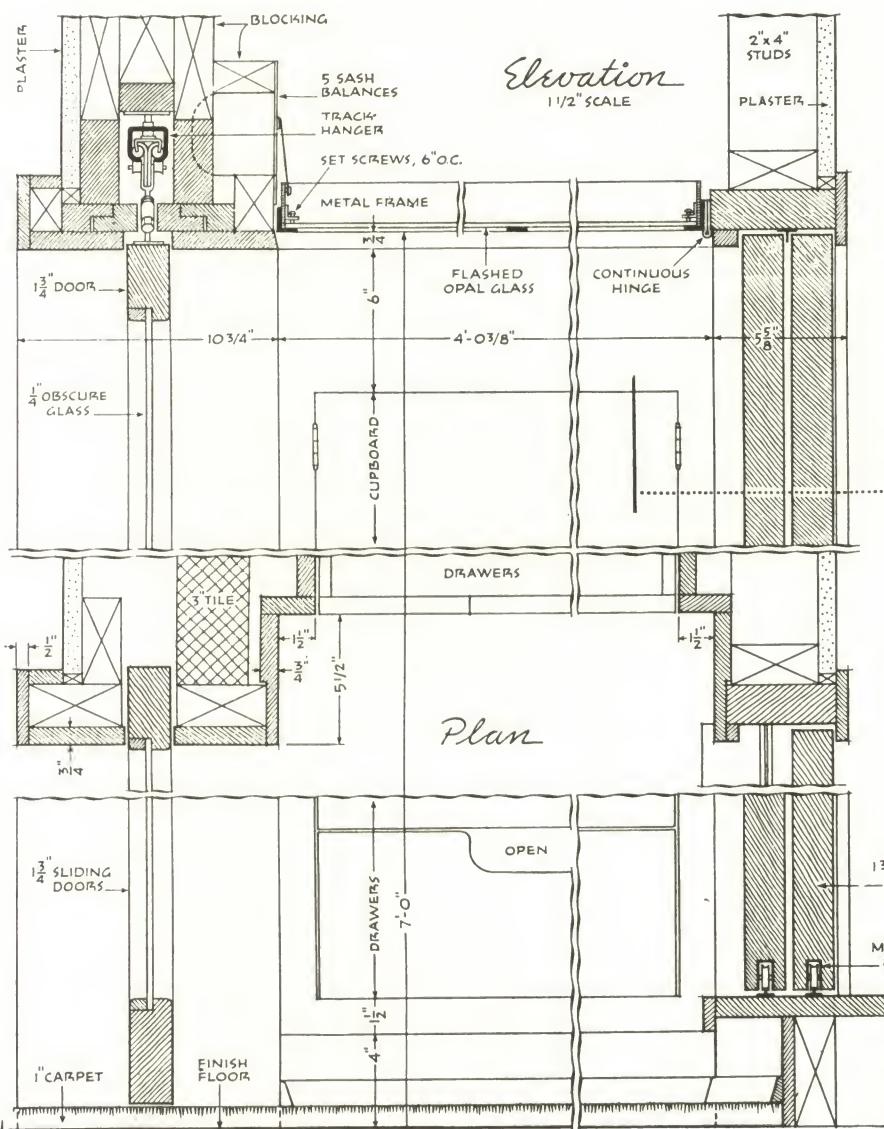
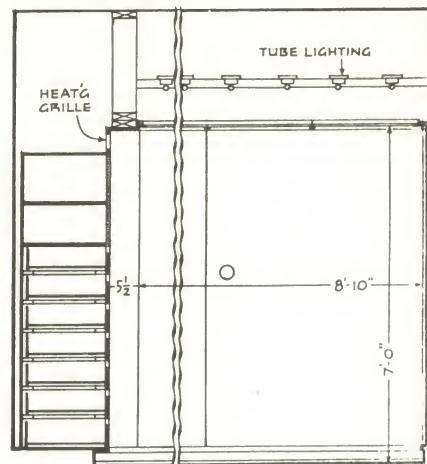
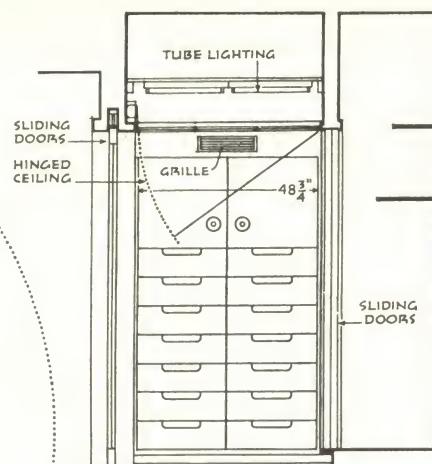
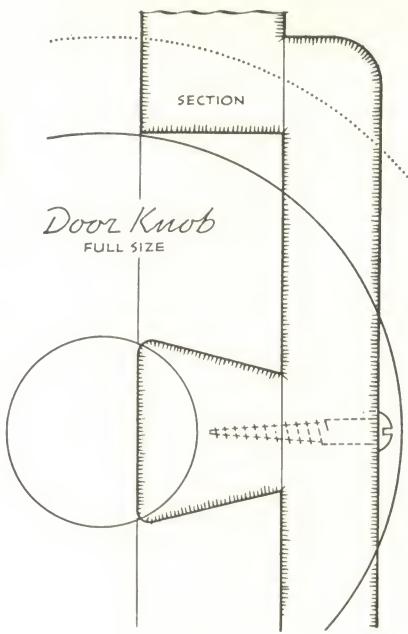
P

HOUSE: DRESSING COUNTER



RALPH CLIFFORD HOUSE
Los Angeles, California

CLIFFORD-LINDSTROM
Designers



DRESSING ALCOVE IN MASTER BEDROOM McSTAY JACKSON CO.
CHICAGO, ILL.

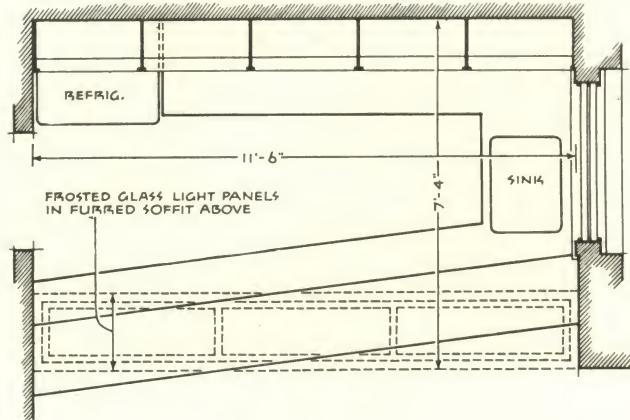
Designers

residence: bar

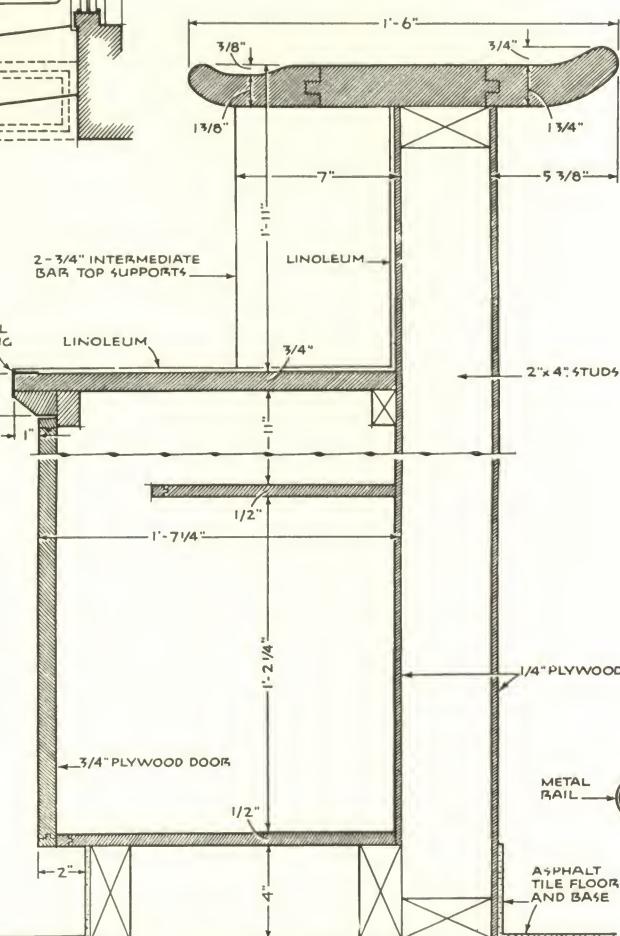


WM. F. HOWLAND

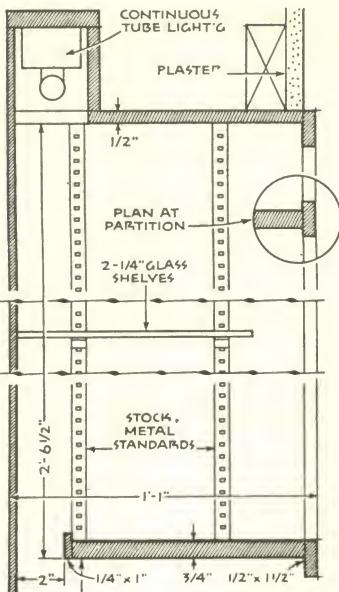
Plan 1/4" SCALE



Bar Section 1 1/2" SCALE



Wall Section
1 1/2" SCALE



1/4" PLYWOOD

1/4"

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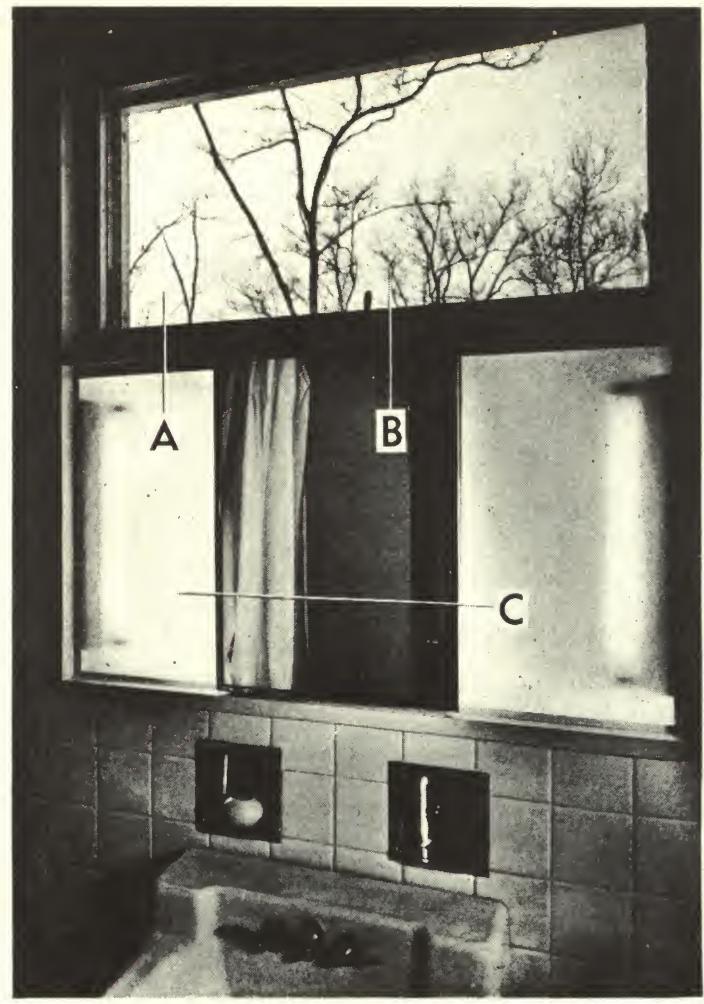
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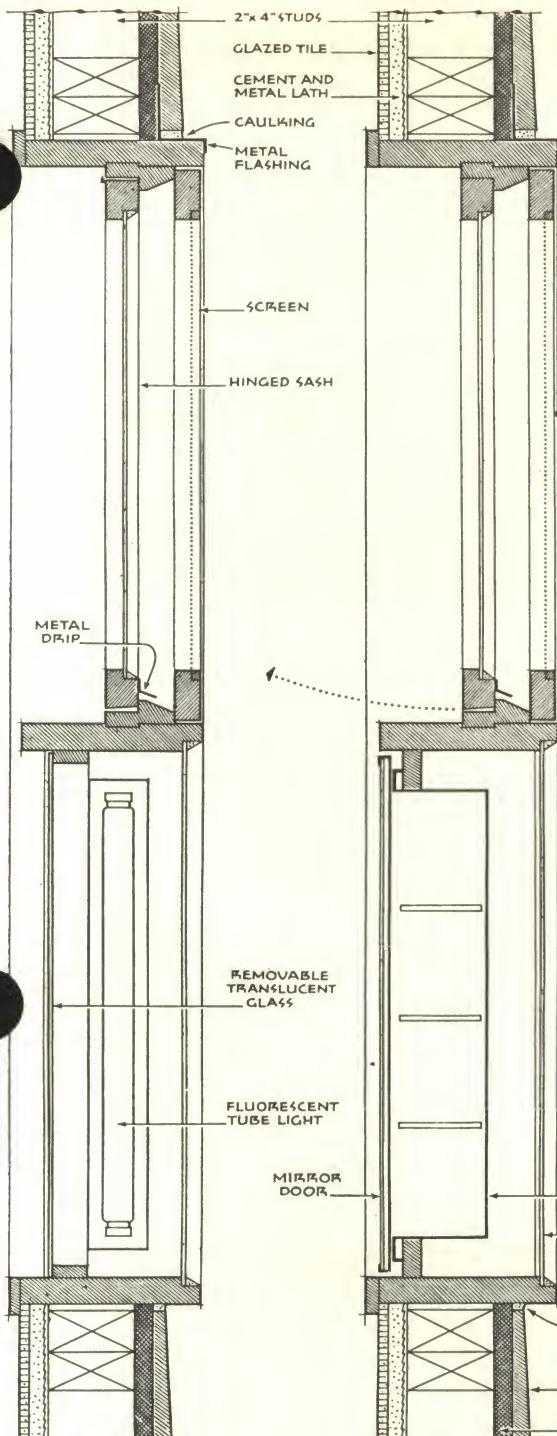
PINTER RESIDENCE, Kittanning, Pa.

Caleb Hornbostel, Architect

house: medicine cabinet window unit



GOTTSCHO - SCHLEISNER



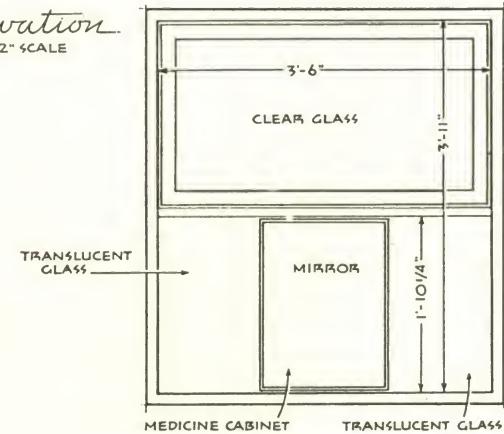
Section A

1/2" SCALE

Section B

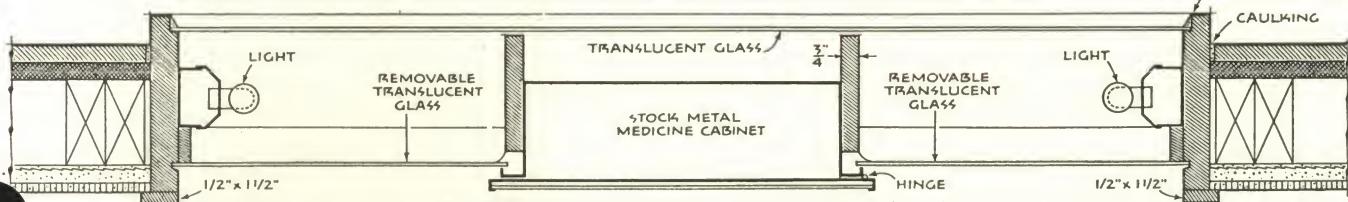
elevation

1/2" SCALE



Plan at C

1/2" SCALE

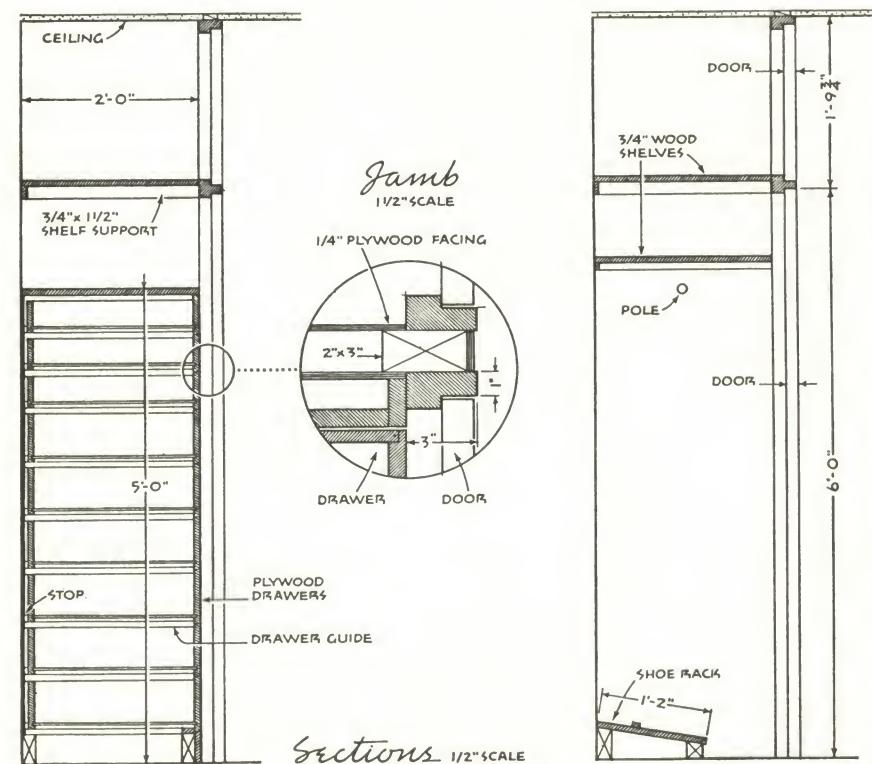
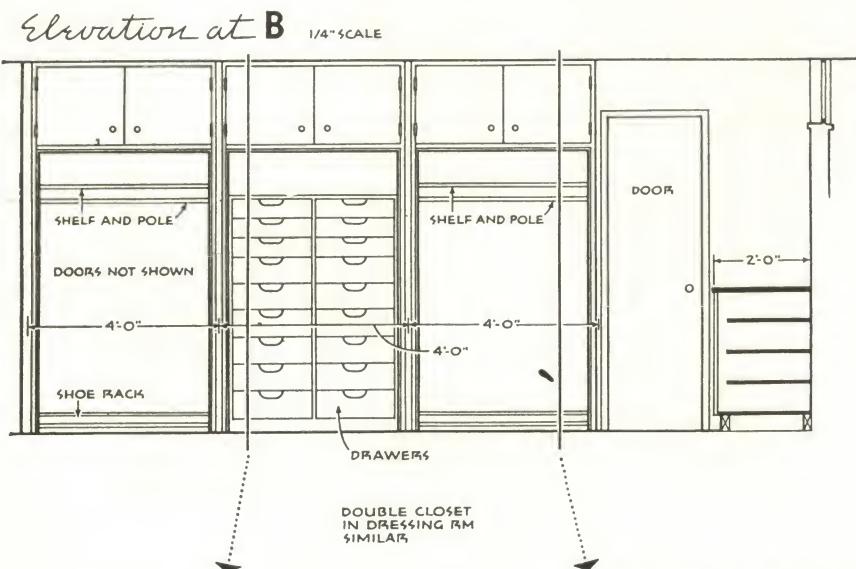
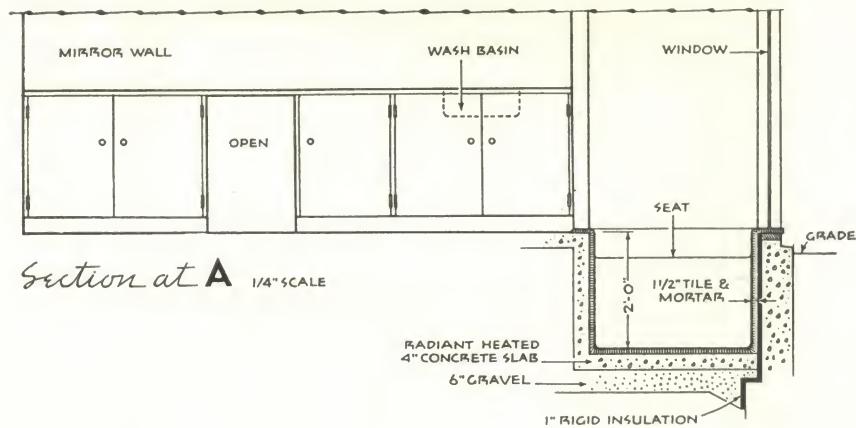


WILLIAM ZENG RESIDENCE, Massapequa, N. Y.

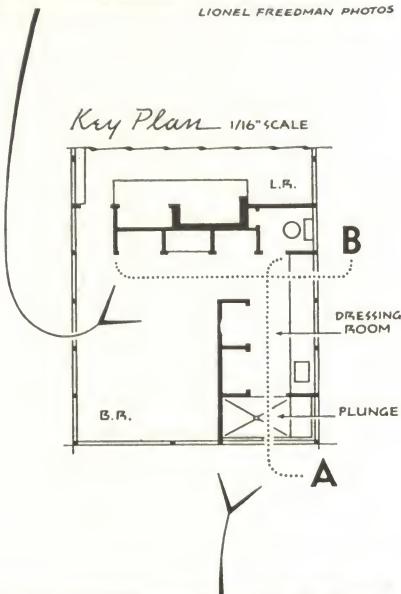
Caleb Hornbostel and J. P. Trouchaud, Architects

Progressive Architecture

RESIDENCE E: bedroom-bathroom storage cabinets



LIONEL FREEDMAN PHOTOS

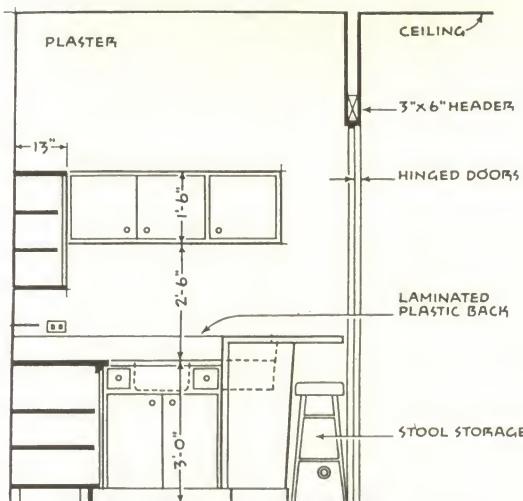


RESIDENCE, White Plains, N.Y.

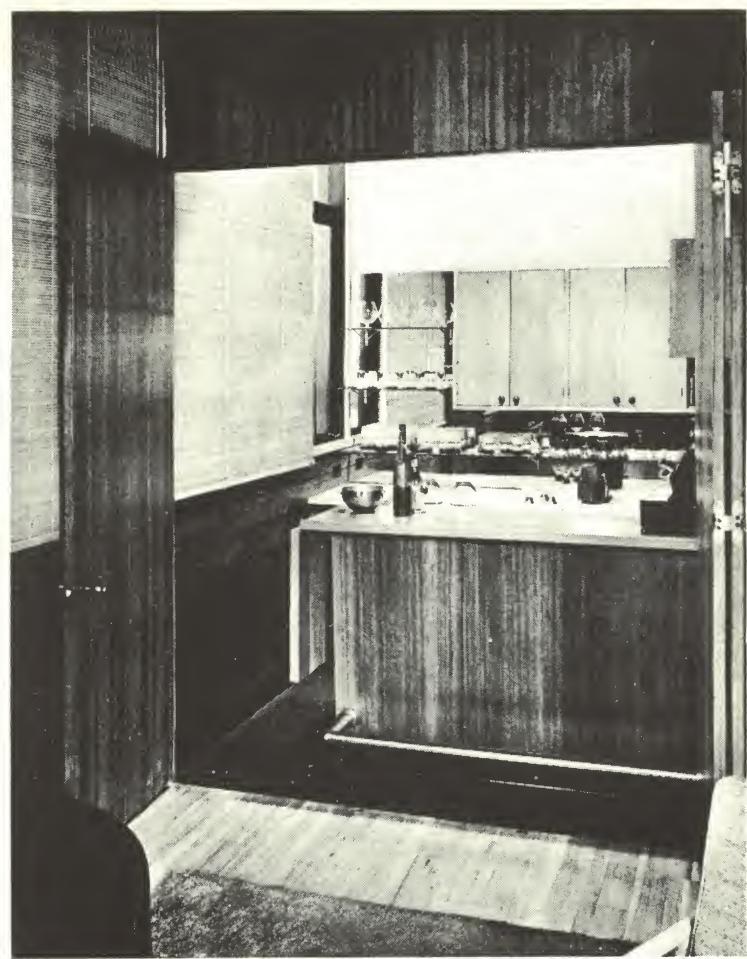
Progressive Architecture

EDWARD D. STONE, ARCHITECT
KARL J. HOLZINGER, JR., ROY S. JOHNSON, ASSOCIATES

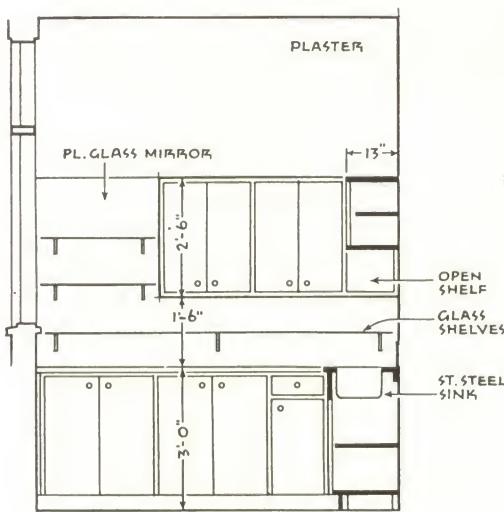
house: bar



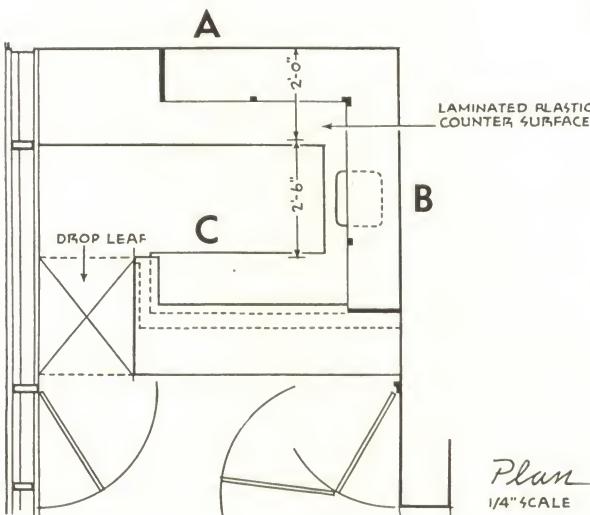
Elevation B 1/4" SCALE



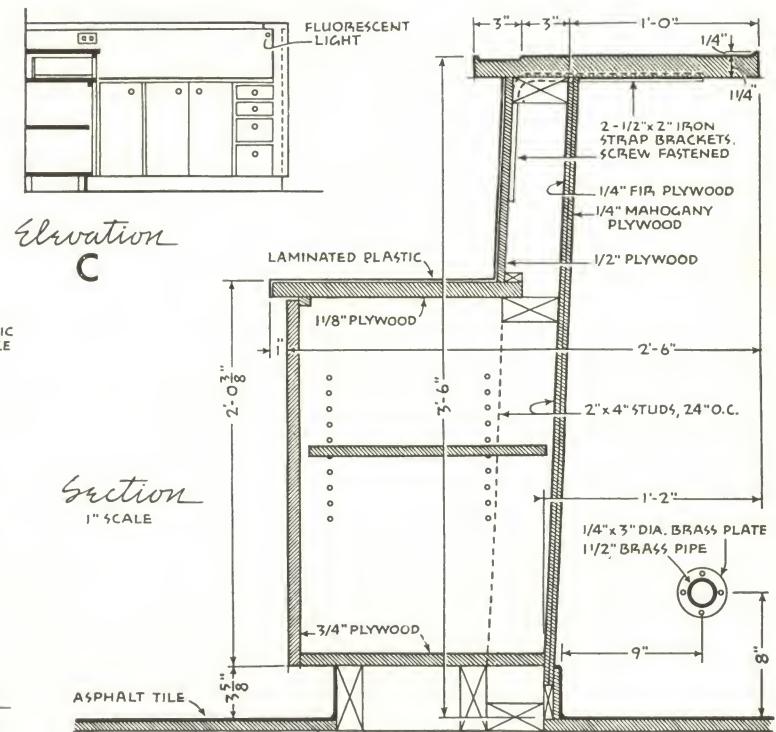
MORLEY BAER



Elevation A 1/4" SCALE



Plan
1/4" SCALE



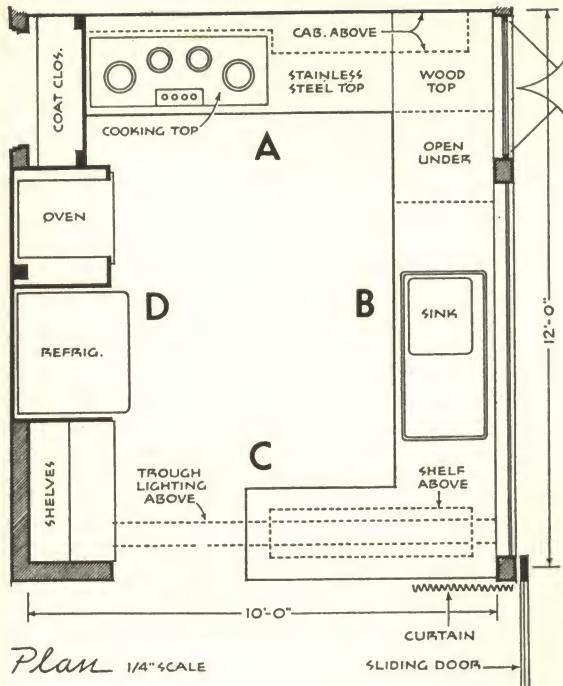
Section
1" SCALE

COSMAS HOUSE, Marin County, Calif.

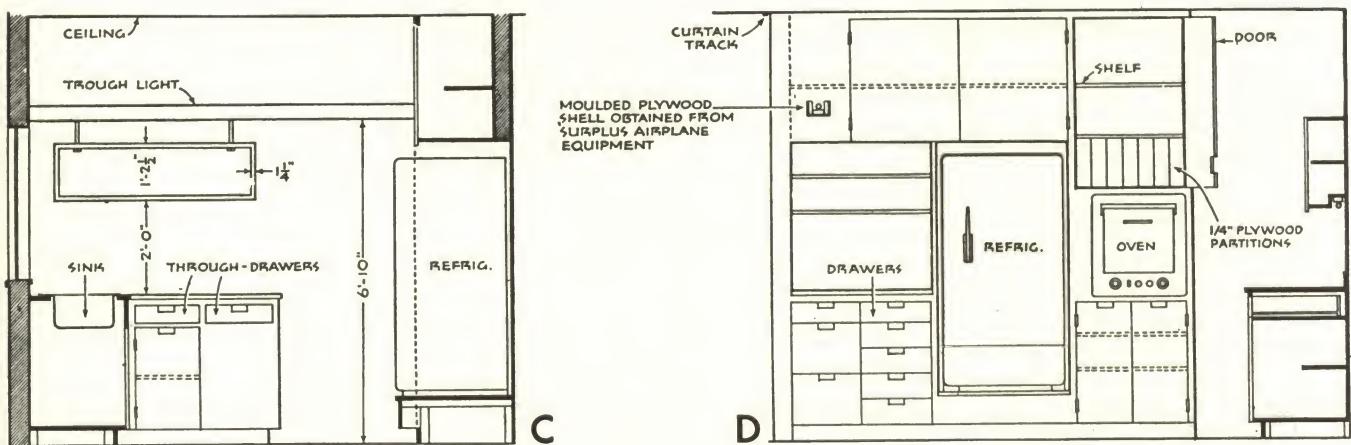
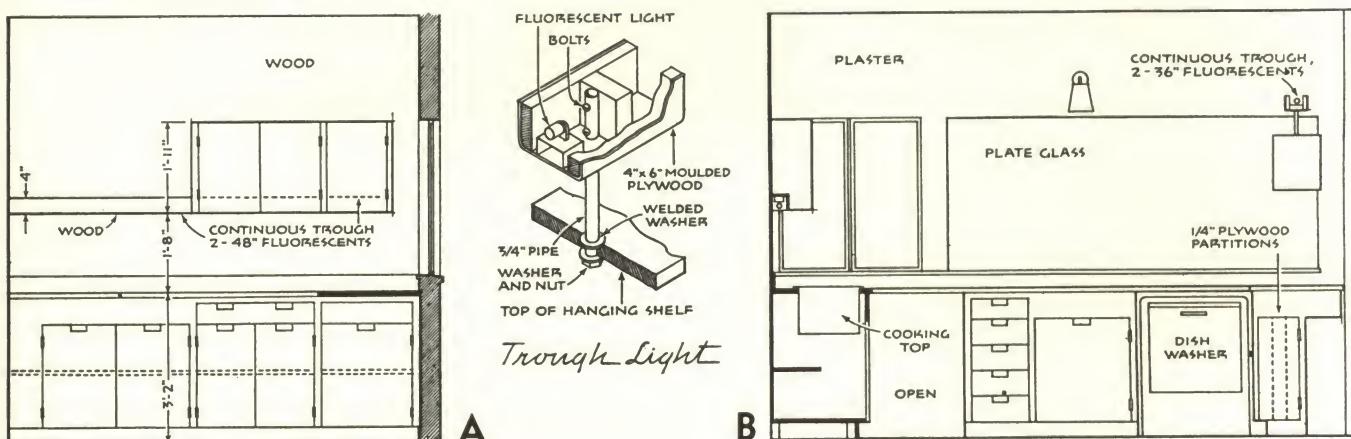
Henry Hill, Architect

Progressive Architecture

RESIDENCE: Kitchen



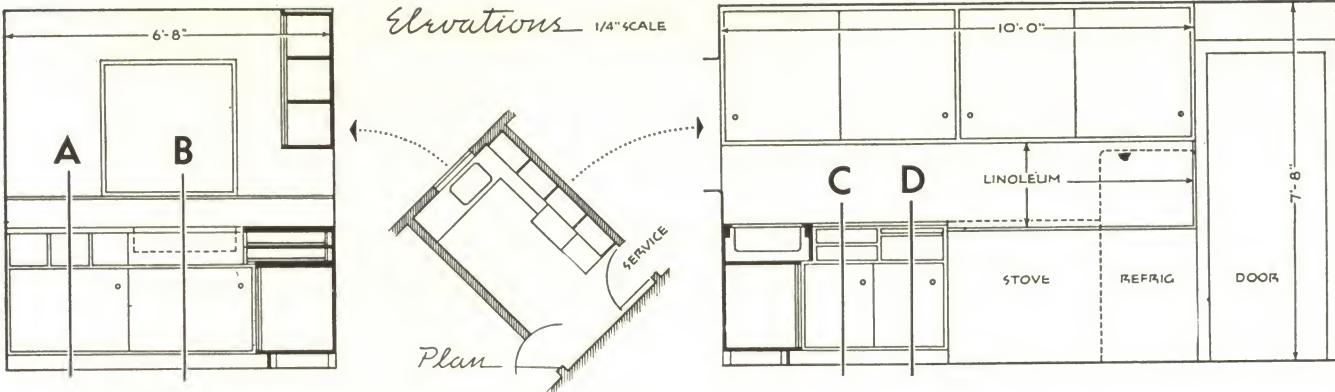
Elevations 1/4" SCALE



STEWART RESIDENCE, Cambridge, Mass.

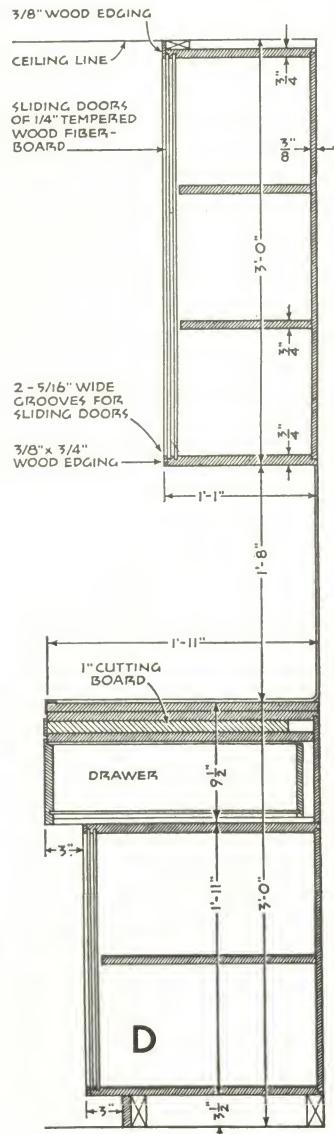
ARCHITECTS COLLABORATIVE, ARCHITECTS

apartment: kitchen

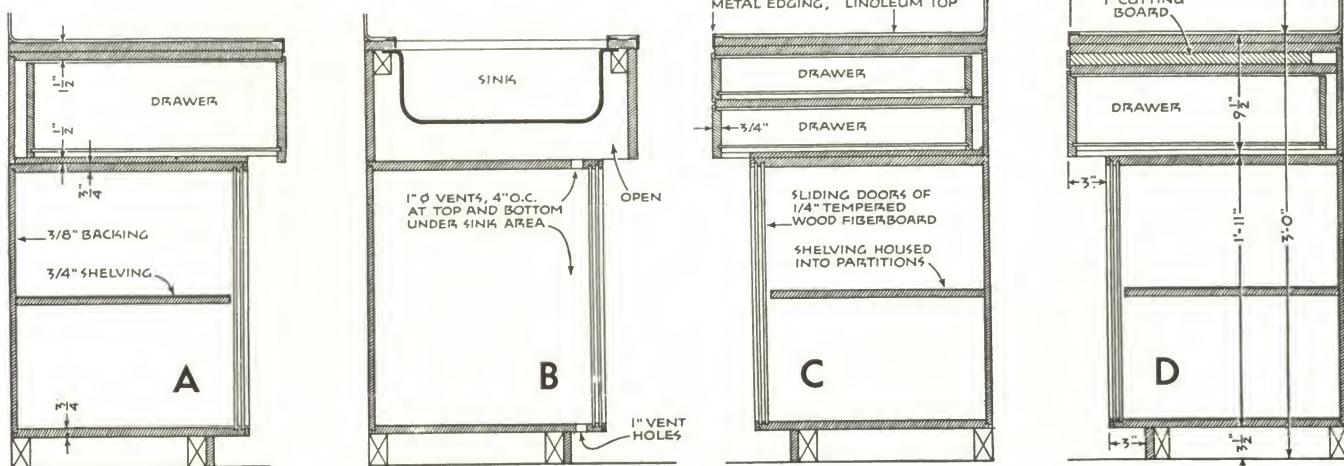


DEARBORN - MASSAR

ALL CABINETS MADE OF PLYWOOD



Base Cabinet Sections 3/4" SCALE

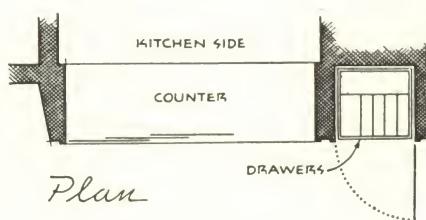
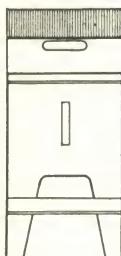
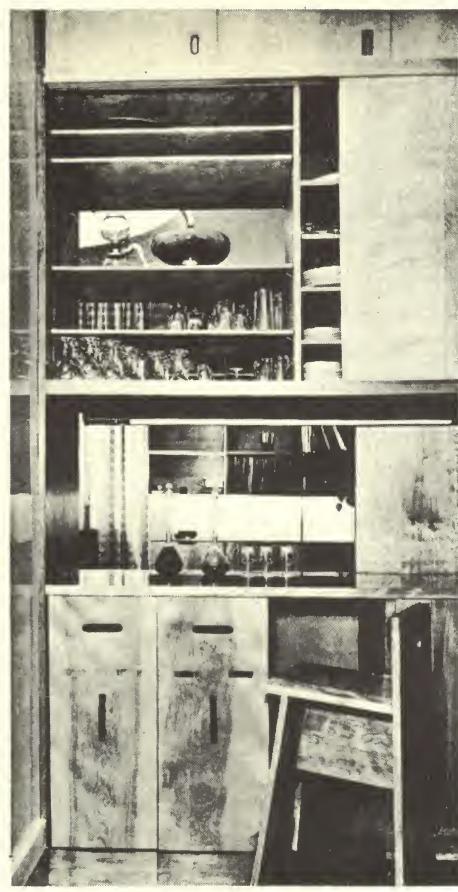
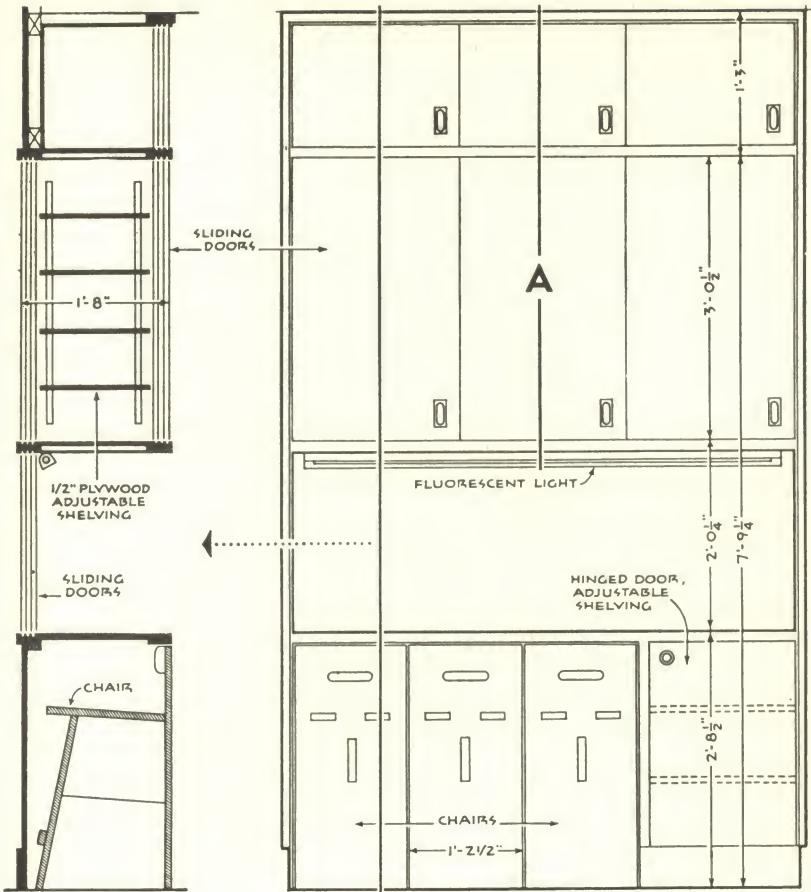


LAKEVIEW BOULEVARD APARTMENTS, Seattle, Wash.

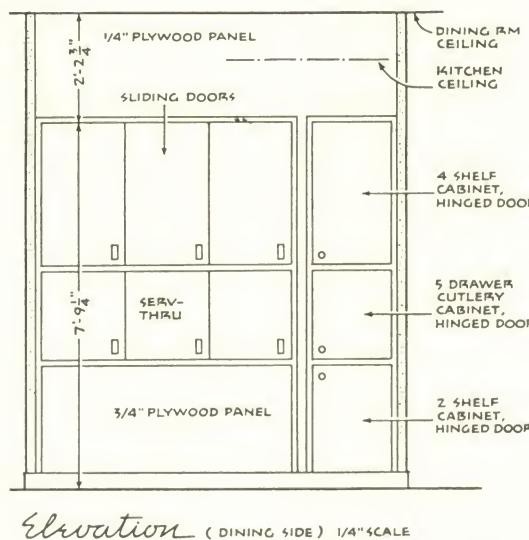
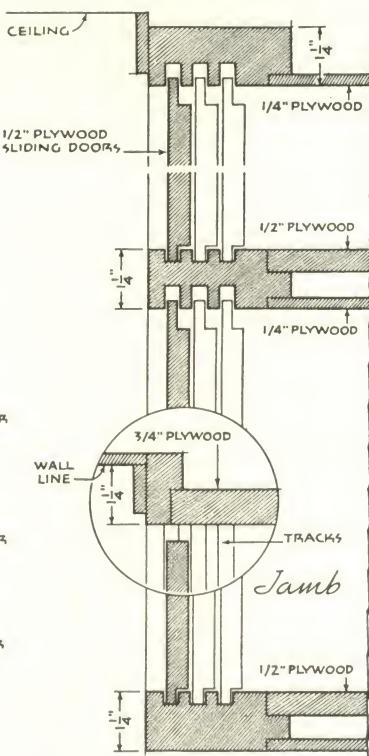
Chiarelli & Kirk, Architects

Progressive Architecture

RESIDENCE. Kitchen-dining serve-through



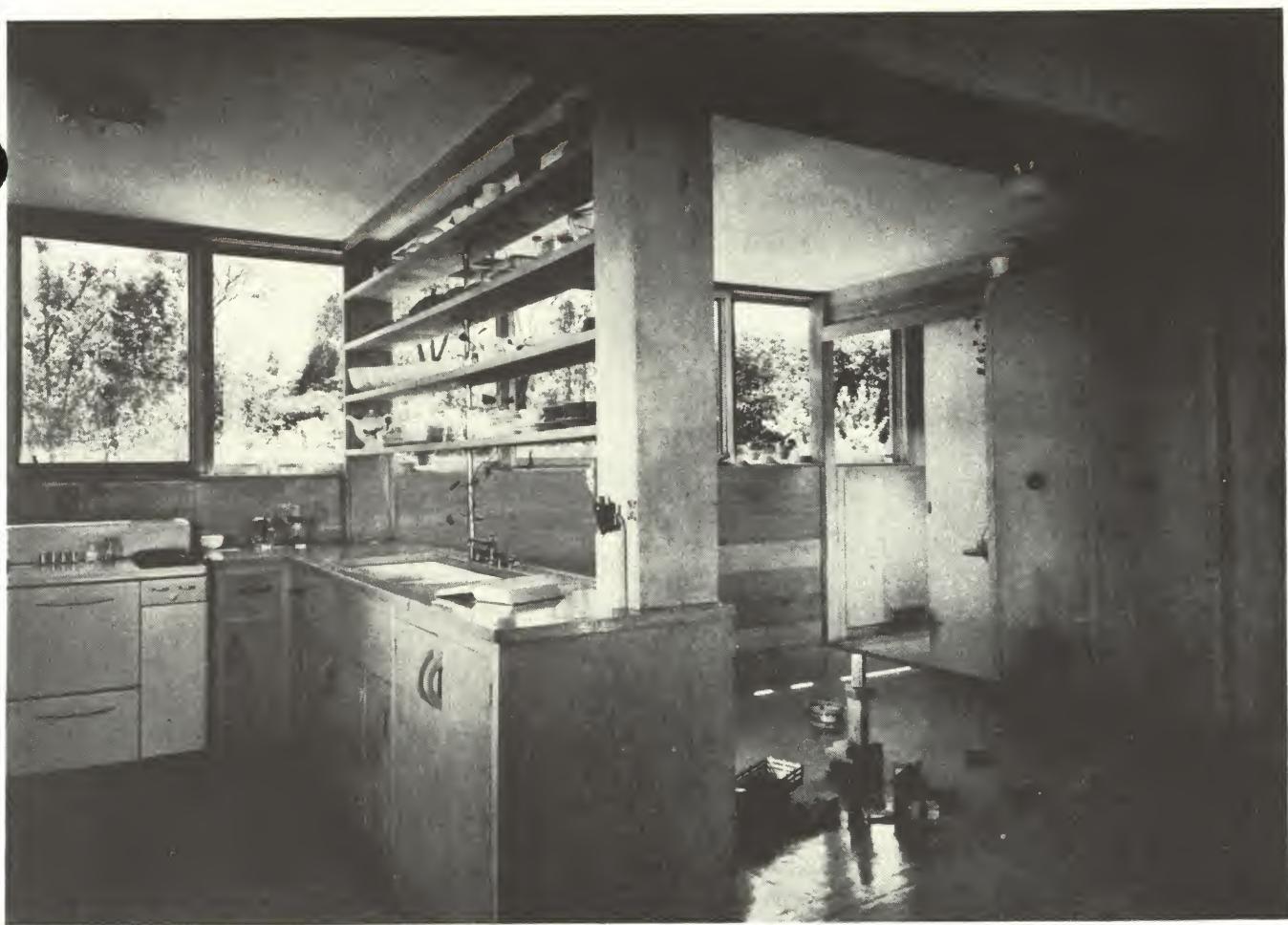
Section at A



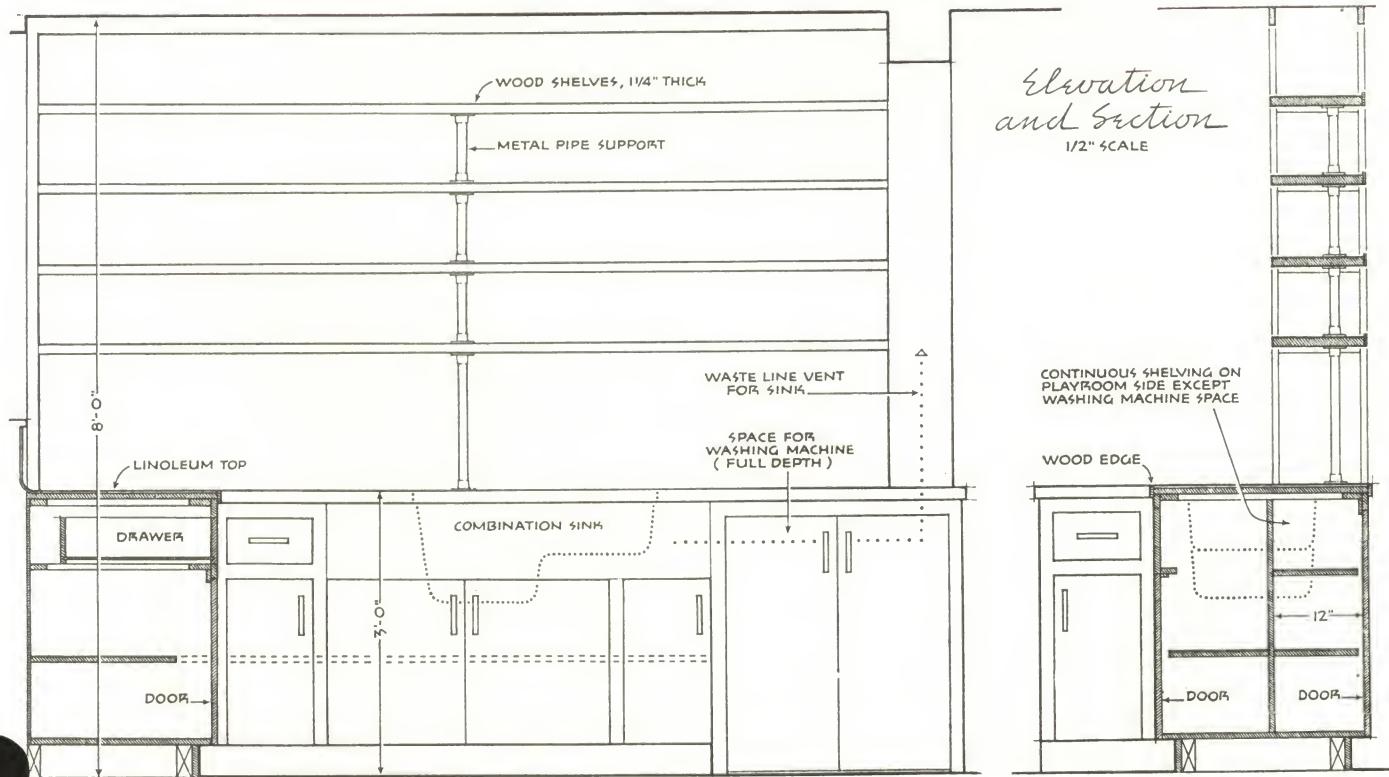
SHAFFER RESIDENCE, New York, N. Y.

KATZ, WAISMAN, BLUMENKRANZ, WEBER & STEIN, ARCHITECTS

RESIDENCE: kitchen pass-through



EZRA STOLLER



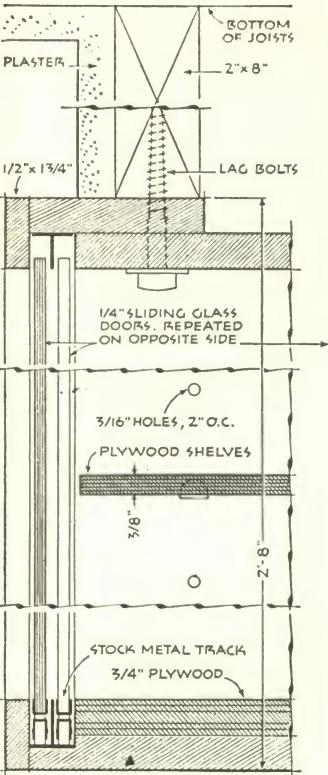
LEON SVIRSKY RESIDENCE, Ossining, New York

HAMBY & NELSON ARCHITECTS

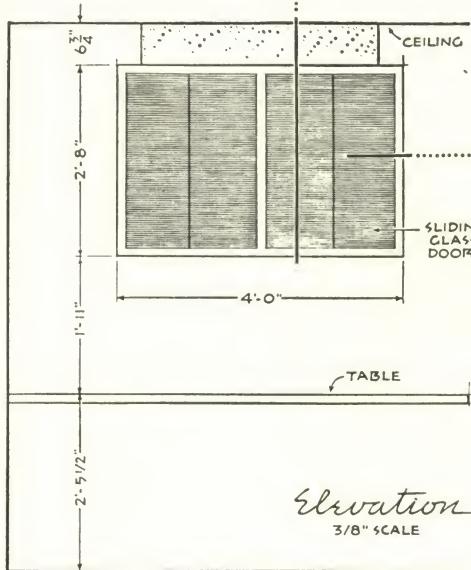
RESIDENTIAL suspended 2-way kitchen cabinet



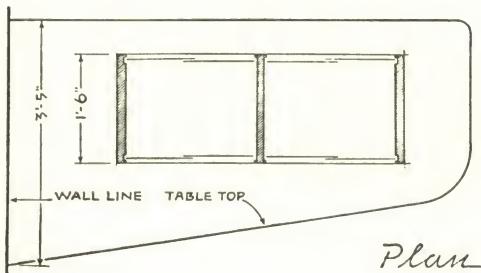
ROBERT C. LAUTMAN



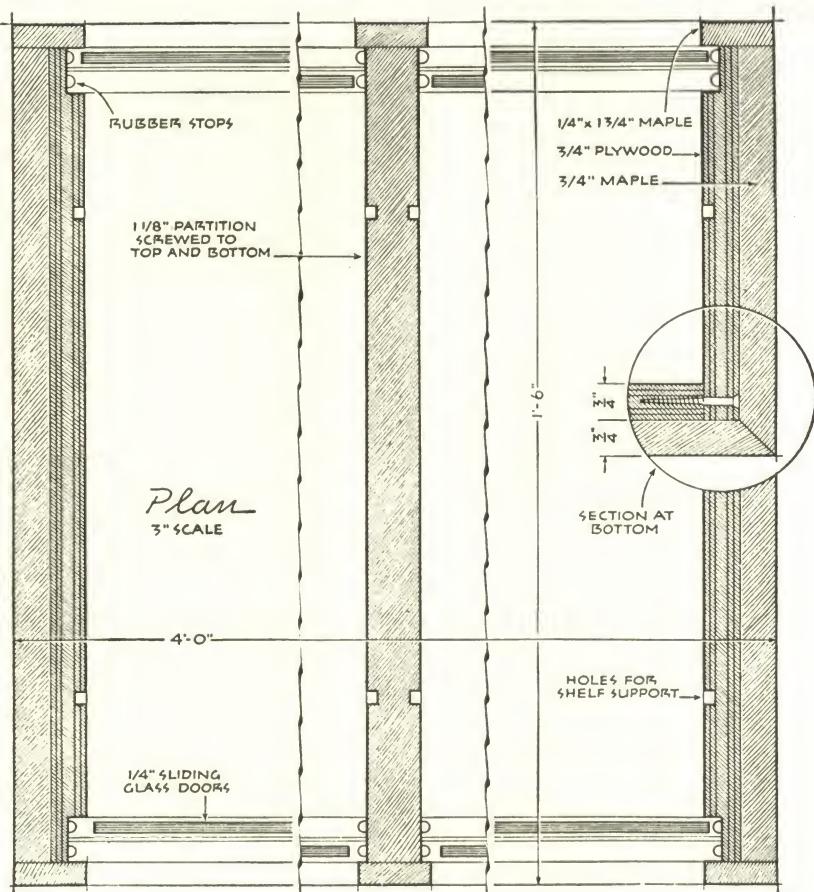
Section
3" SCALE



Elevation
3/8" SCALE



Plan

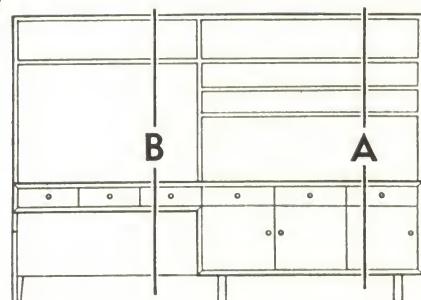
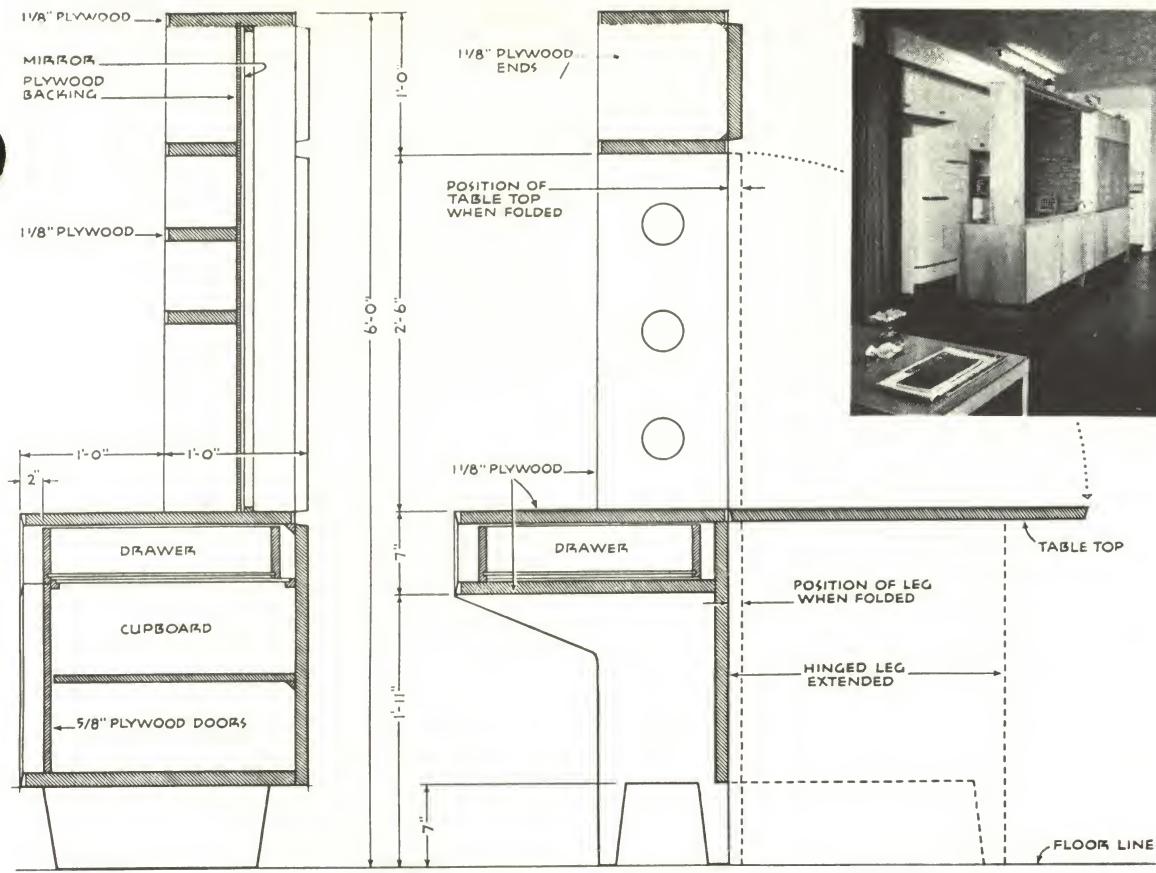


J. P. TROUCHAUD, DESIGNER

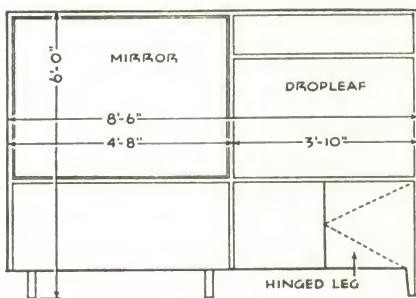
DORT RESIDENCE, Washington, D. C.

Progressive Architecture

HOUSE: kitchen cabinet partition



Elevation KITCHEN SIDE 1/4" SCALE



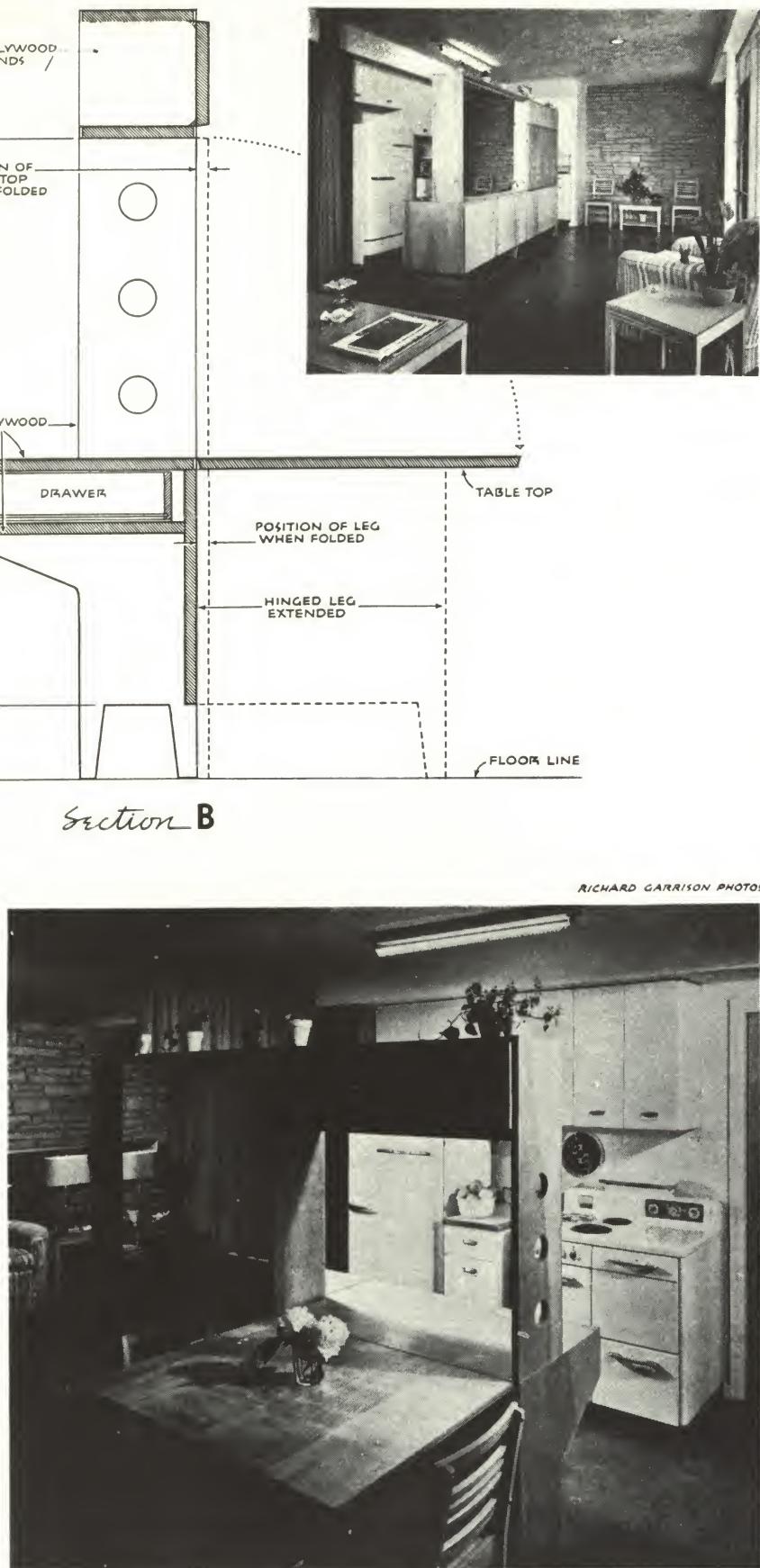
RESIDENCE FOR SCHOOLTEACHER

Pittsburgh, Pennsylvania

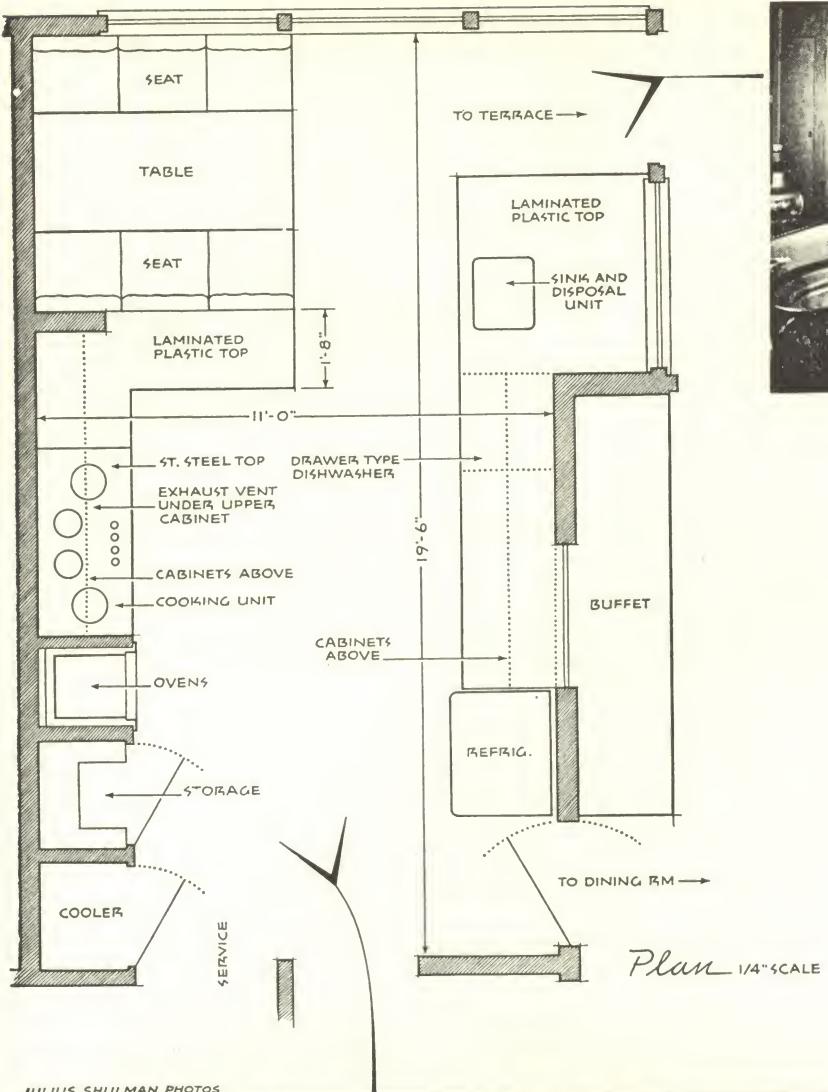
Progressive Architecture

MITCHELL & RITCHIEY

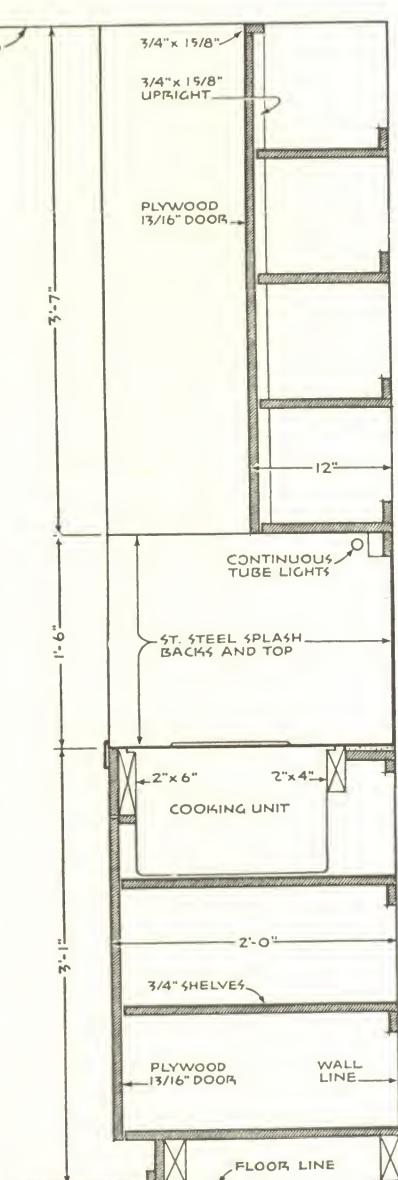
Architects



RESIDENCE: Kitchen detail



JULIUS SHULMAN PHOTOS



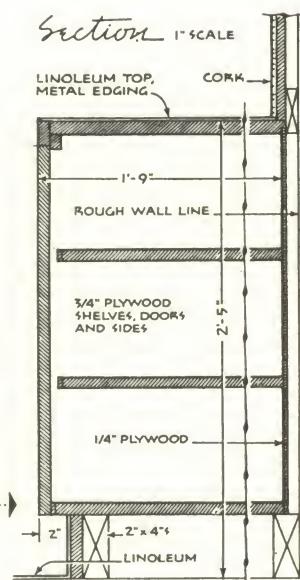
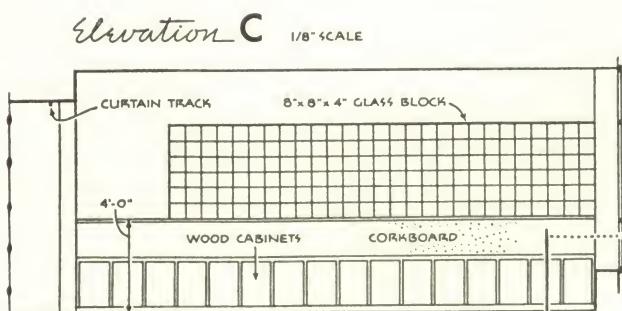
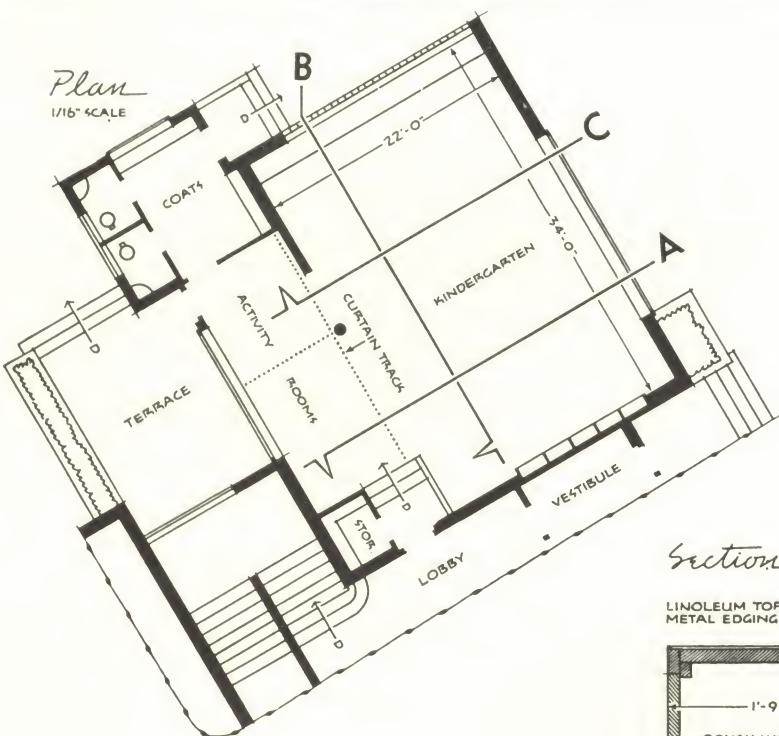
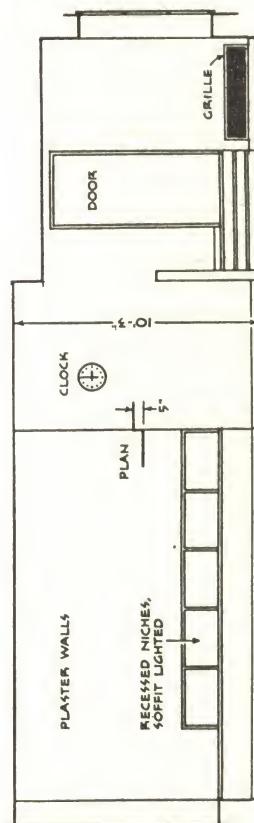
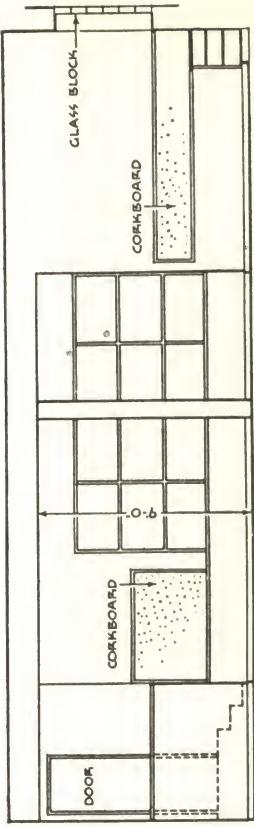
Wall Section 3/4" SCALE

TREWEEK RESIDENCE, Los Angeles, Calif.

Progressive Architecture

RICHARD J. NEUTRA, Architect

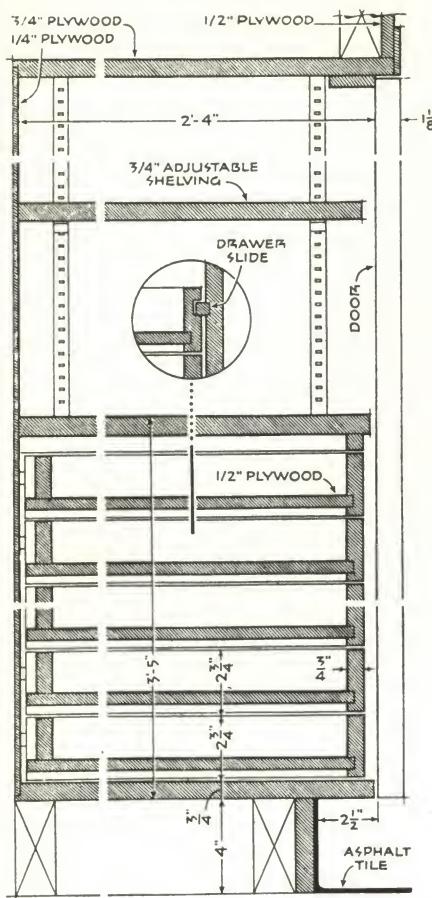
school: kindergarten



NORTHVILLE GRADE SCHOOL, Northville, Mich.

Lyndon & Smith, Architects

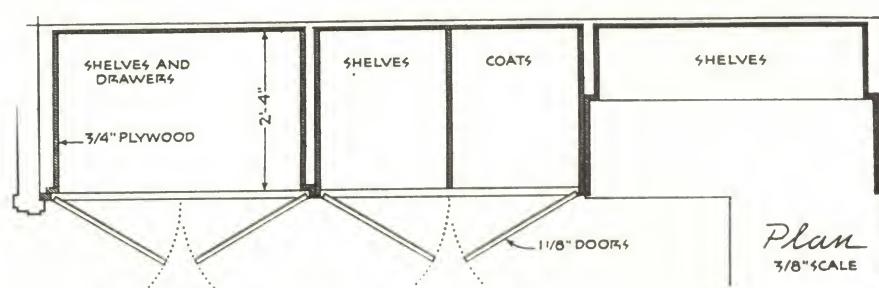
SCHOOL: kindergarten storage cabinets



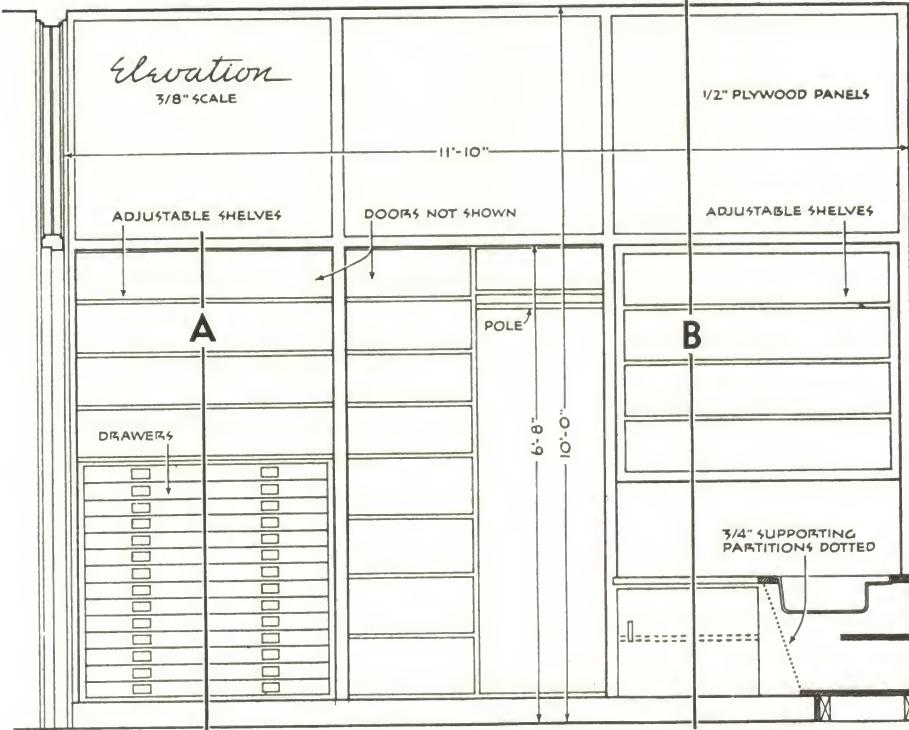
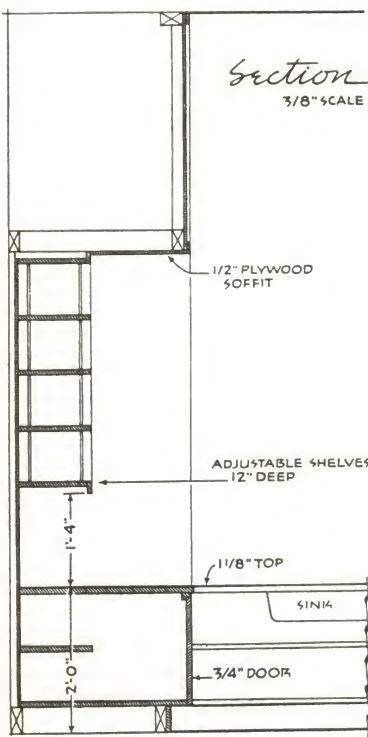
Section A 1 1/2" SCALE



HEDRICH-BLESSING



 Section B
3/8" SCALE



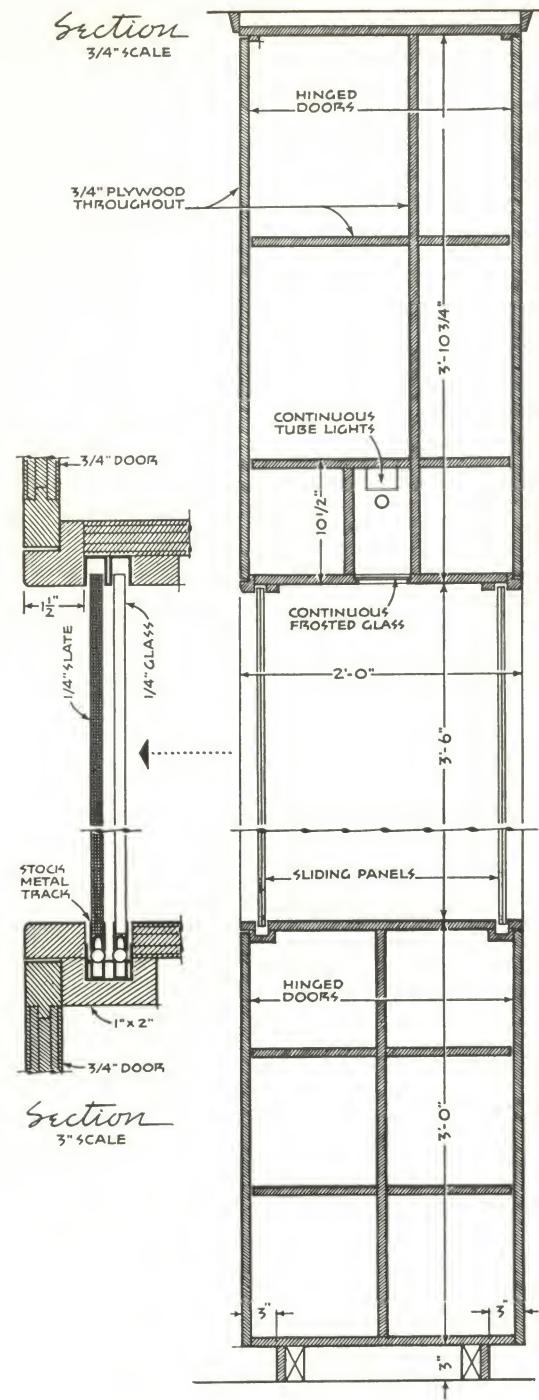
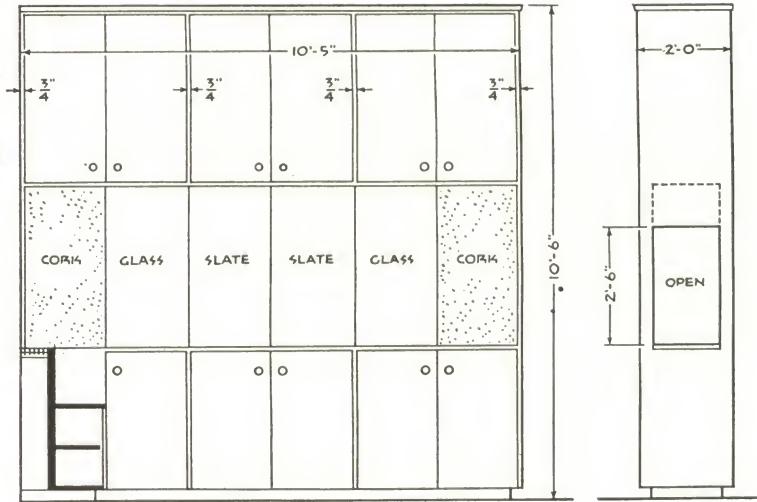
DREXEL SCHOOL, Cicero, Illinois

PERKINS & WILL, ARCHITECTS

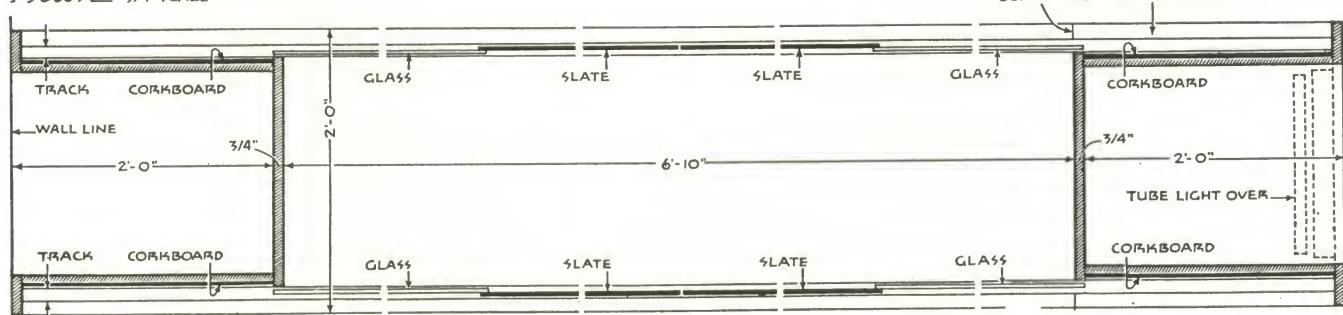
kindergarten: storage cabinets



SUZANNE SZASZ



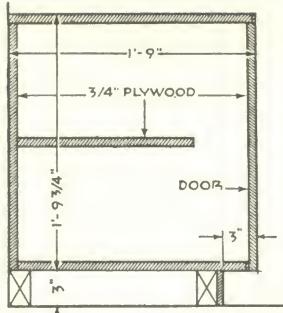
Plan 3/4" SCALE



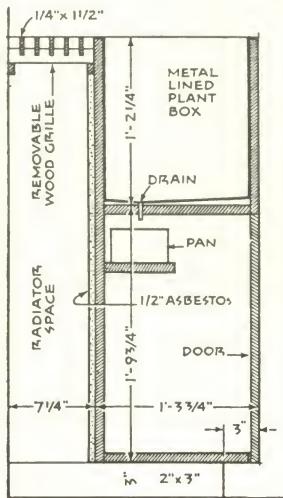
MILTON SCHOOL, Rye, N. Y.

Caleb Hornbostel, Architect

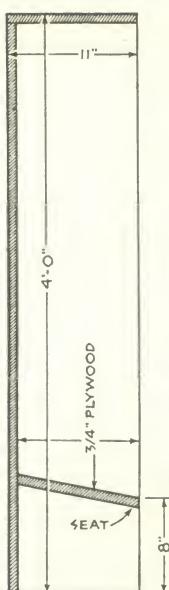
kindergarten: storage wall



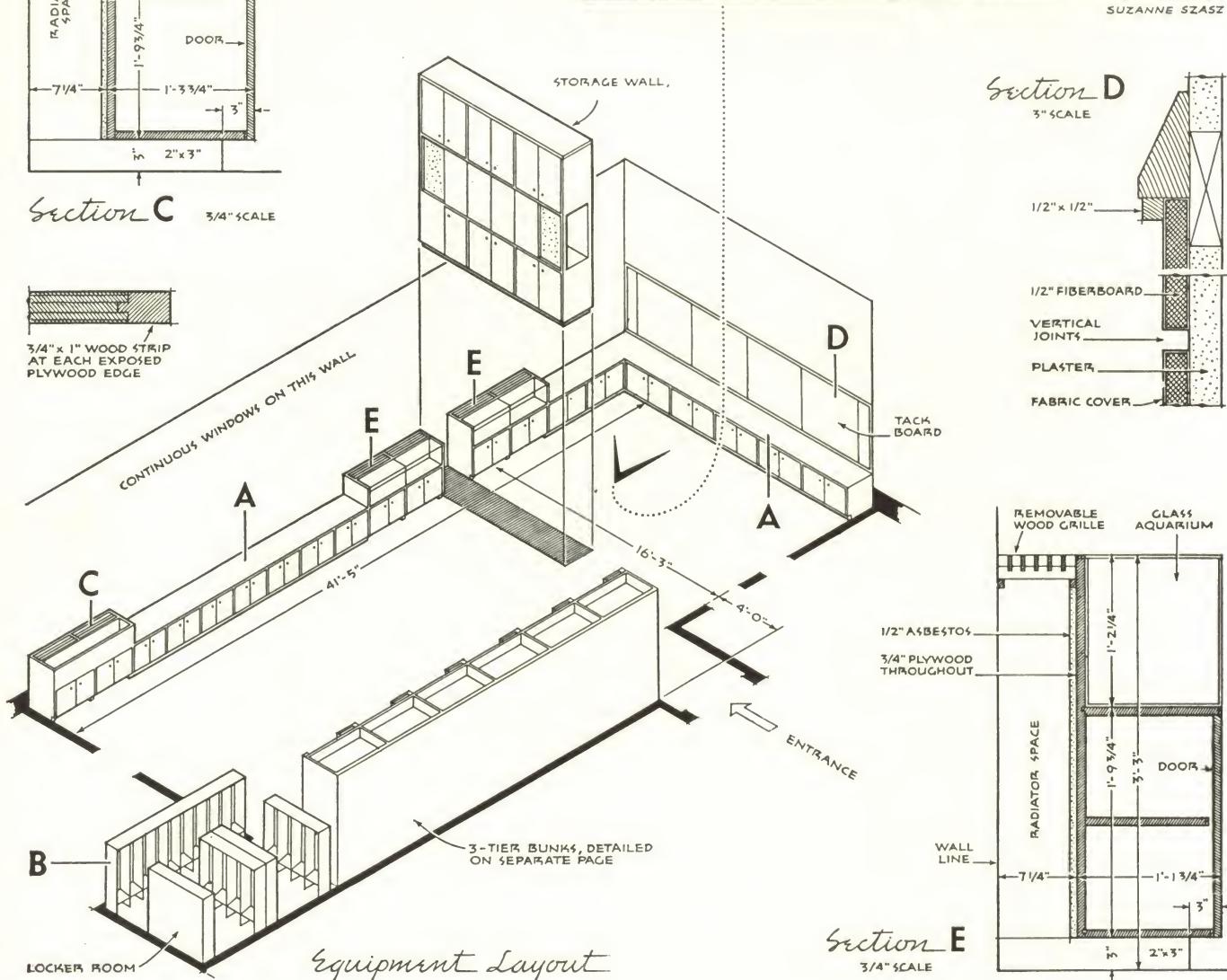
Section A 3/4" SCALE



Section C 3/4" SCALE



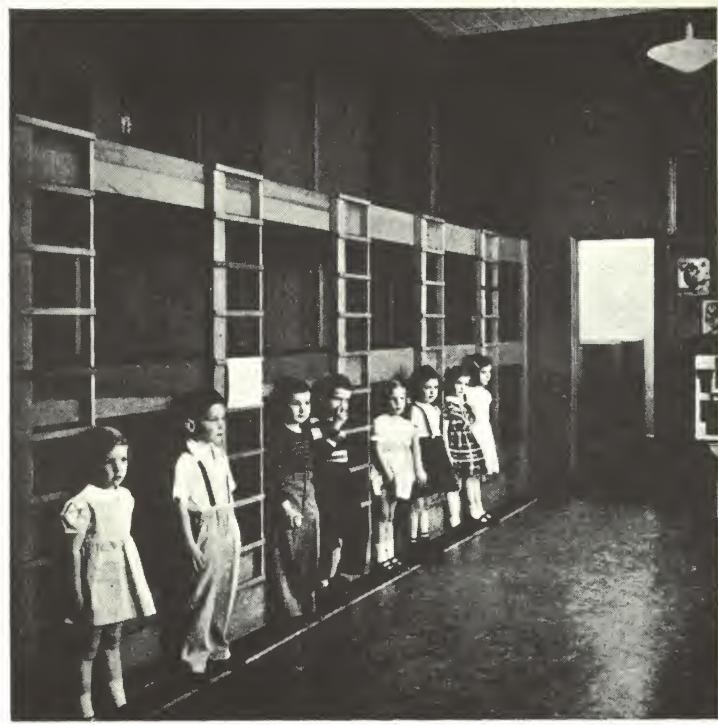
Section B 3/4" SCALE



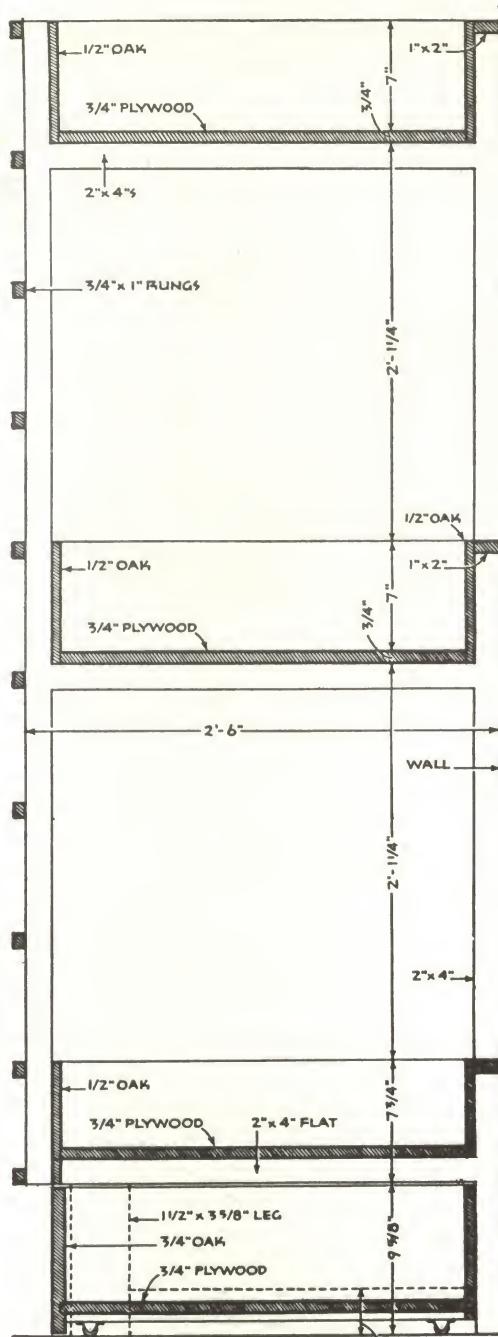
MILTON SCHOOL, Rye, N. Y.

Caleb Hornbostel, Architect

kindergarten: bunks



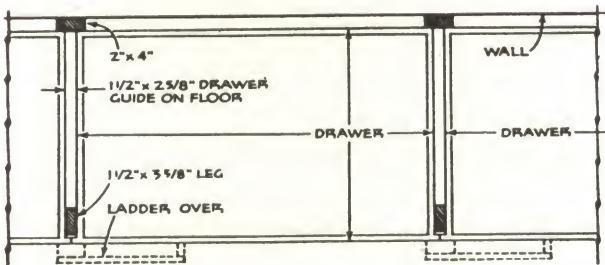
SUZANNE SZASZ



Section 1" SCALE

1 1/2" x 2 9/16" DRAWER GUIDE

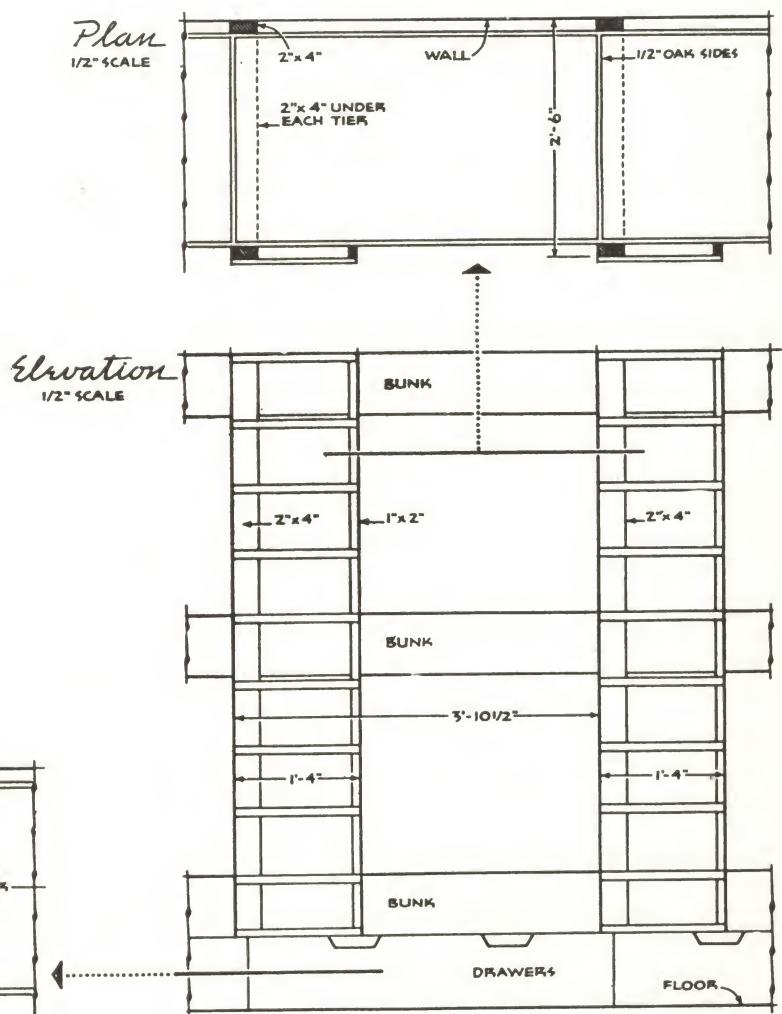
Plan 1/2" SCALE



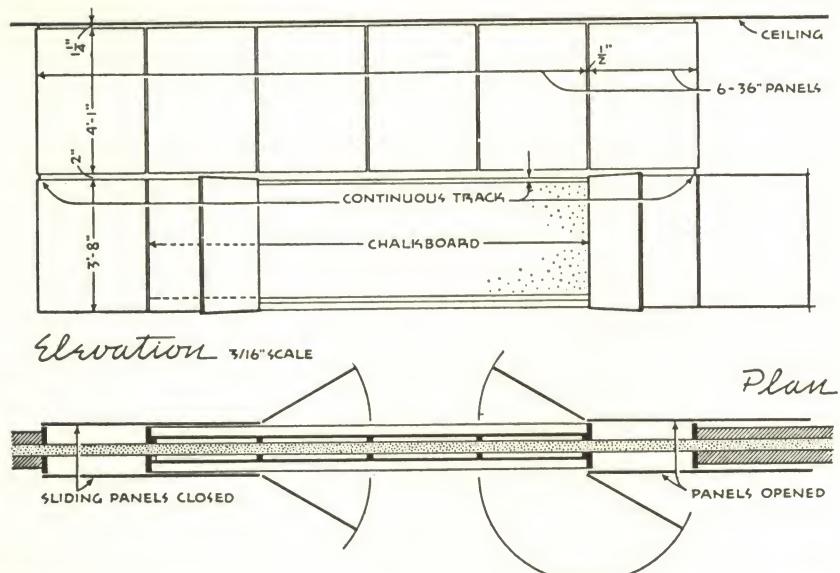
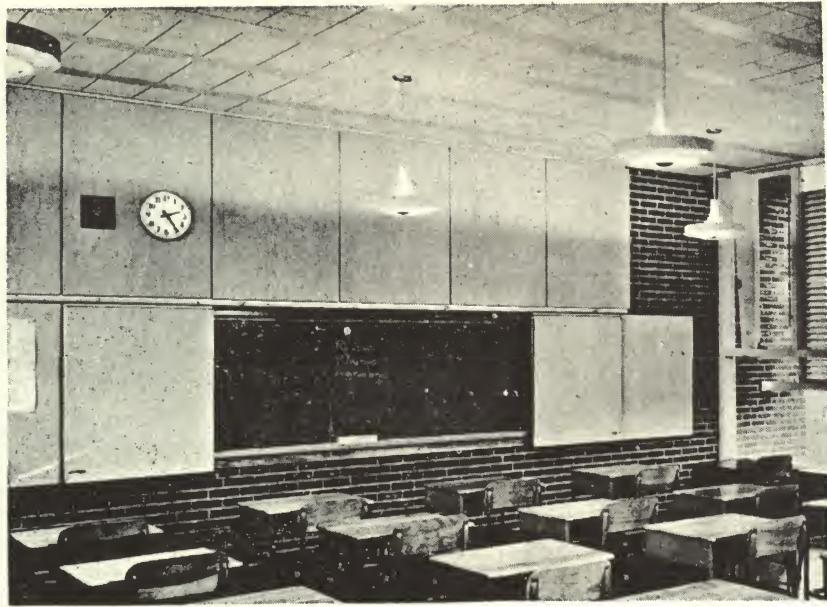
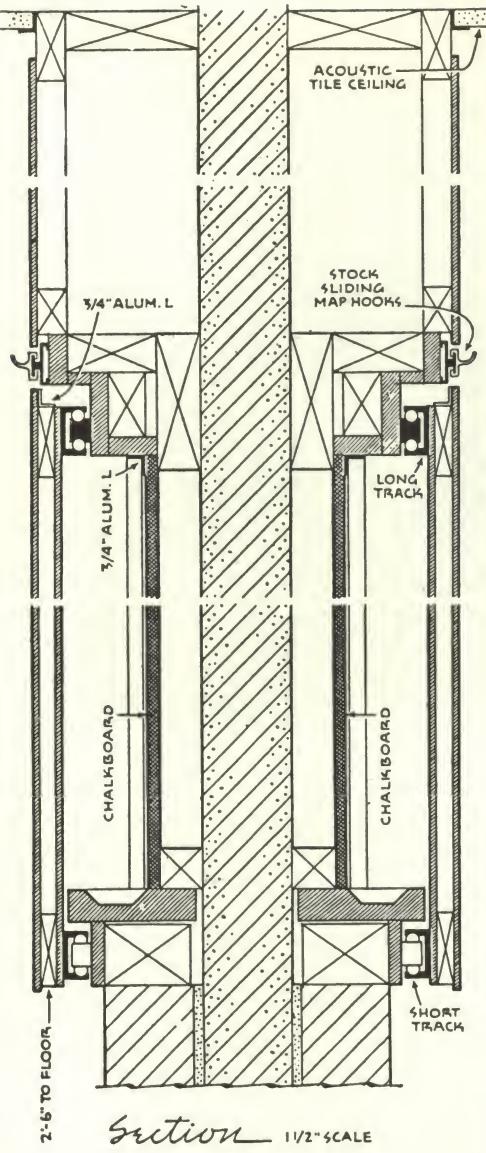
MILTON SCHOOL, Rye, N.Y.

Caleb Hornbostel, Architect

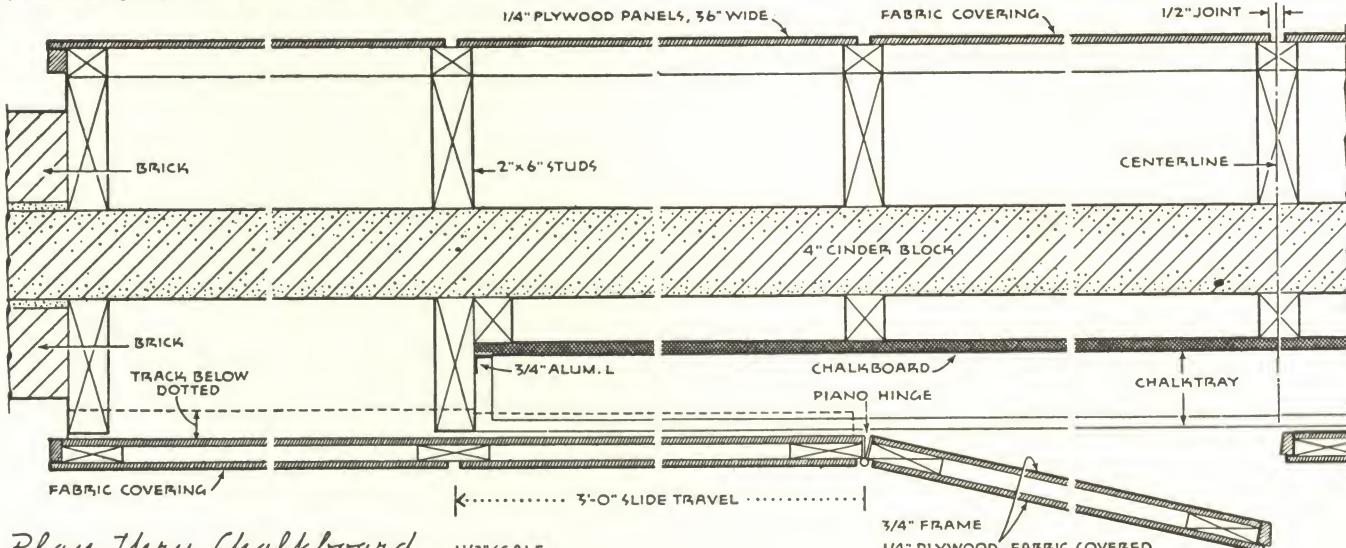
Progressive Architecture



school: classroom chalkboard



Plan over Chalkboard



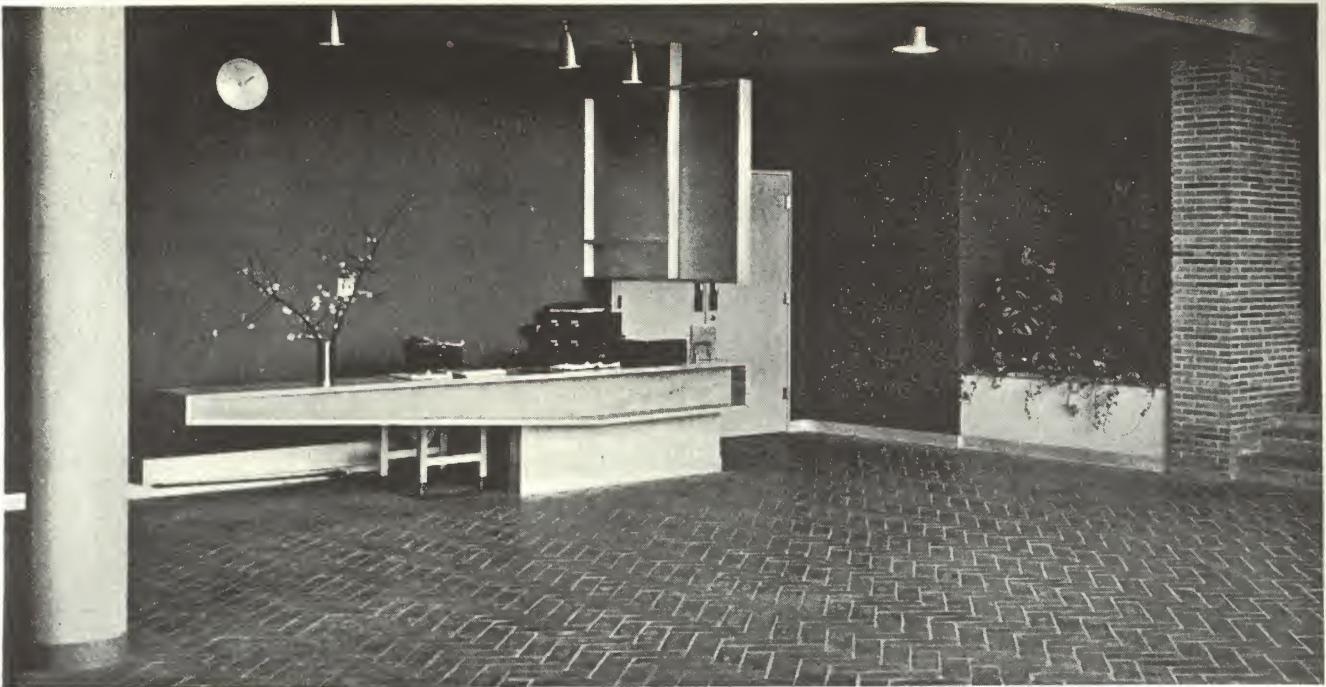
Plan thru Chalkboard 1/2" scale

DARIEN JUNIOR HIGH SCHOOL, Darien, Conn.

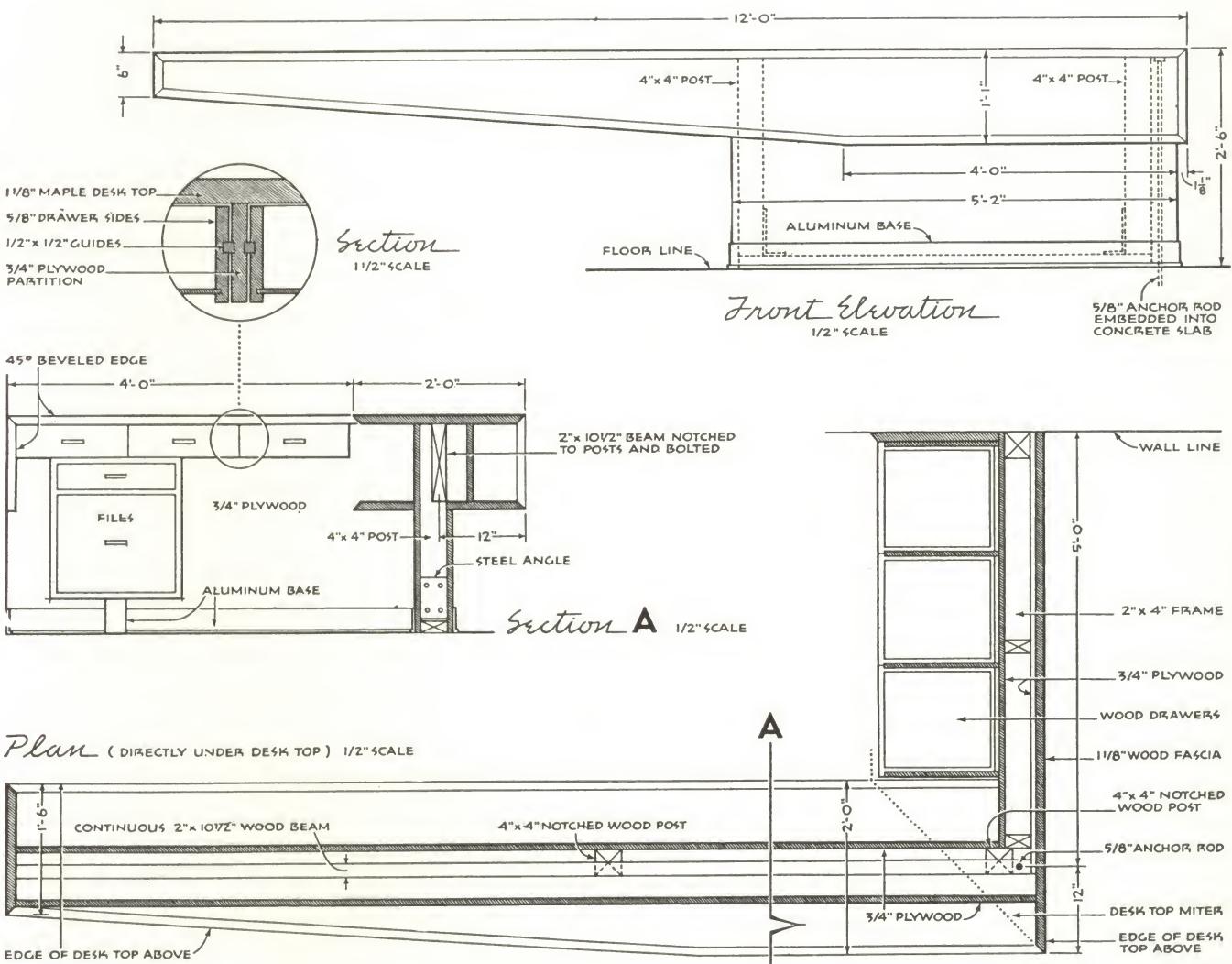
Ketchum, Gina & Sharp, Architects
Moore and Hutchins, Consulting Architects

Progressive Architecture

administration building: receptionist's desk



DEARBORN - MASSAR

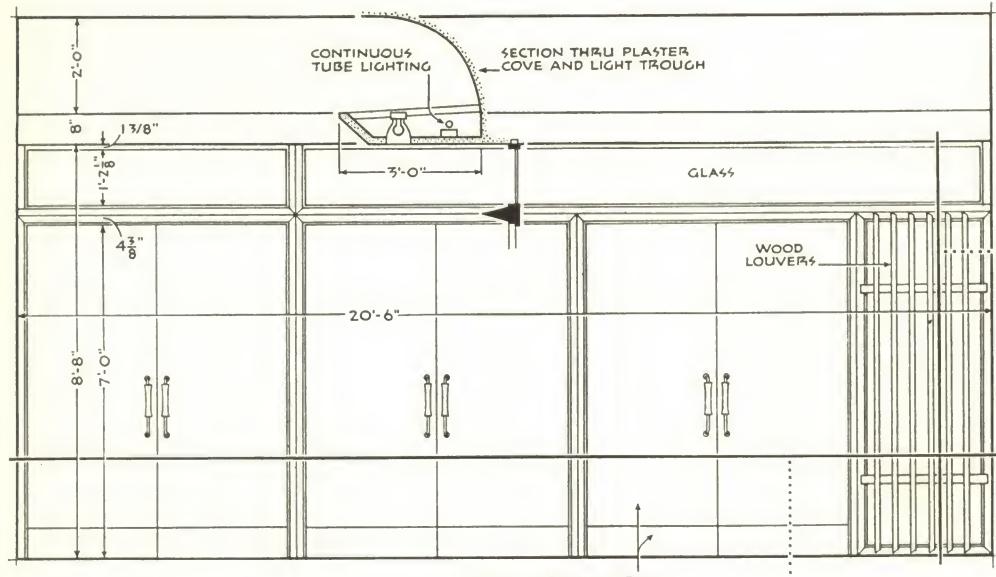
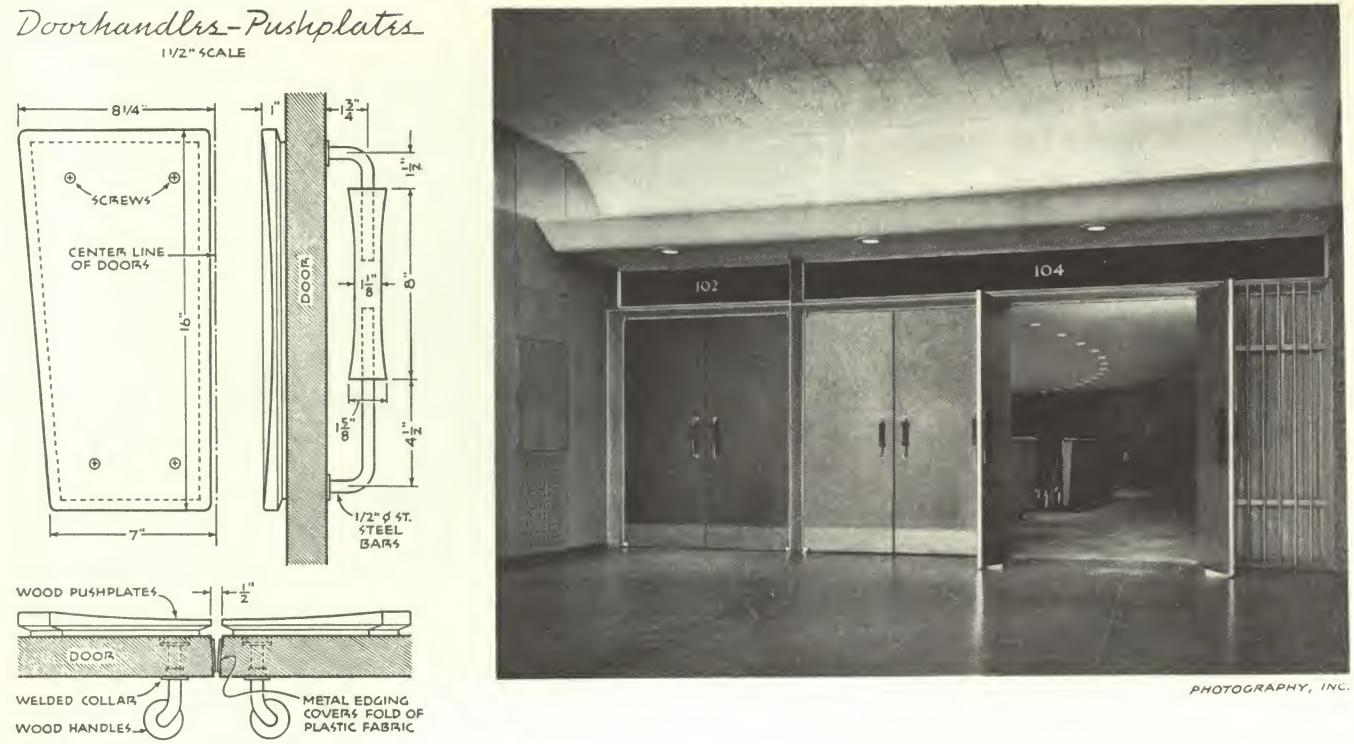


SCHOOL ADMINISTRATION BUILDING, Seattle, Wash.

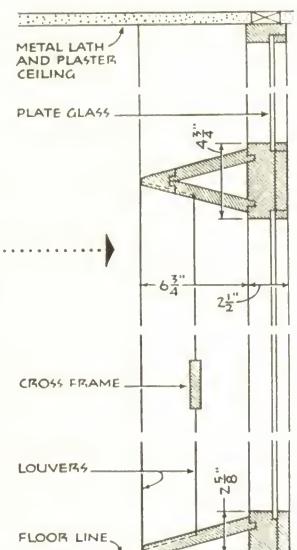
J. Lister Holmes & Associates, Architects

Progressive Architecture

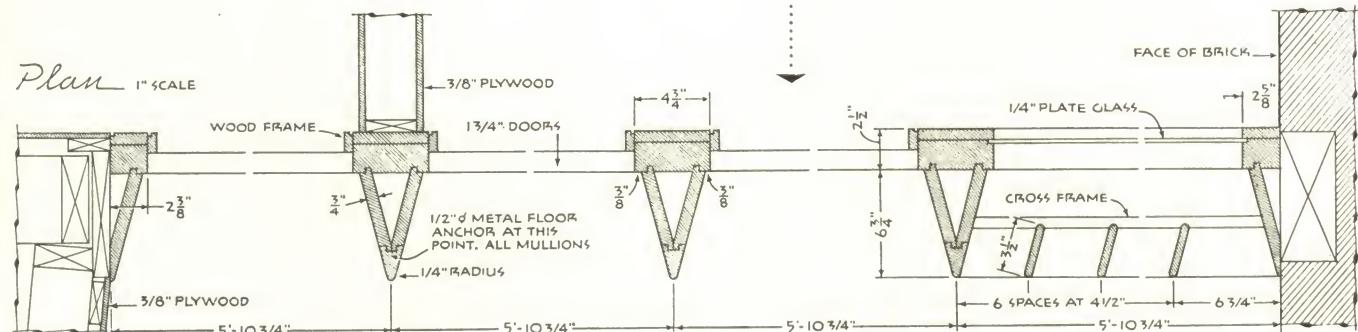
UNIVERSITY: entrance doors to auditorium



Elevation 1/4" SCALE



Section



DRAKE UNIVERSITY SCIENCE BUILDING

Des Moines, Iowa

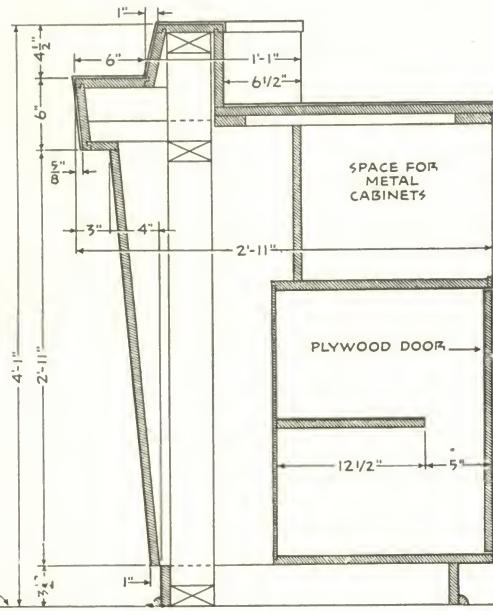
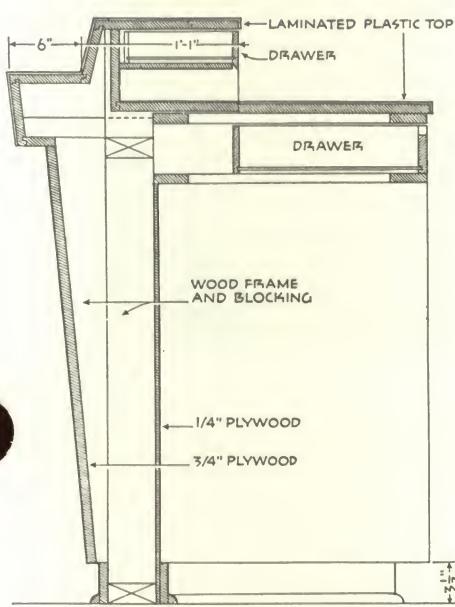
Progressive Architecture

**SAARINEN, SWANSON & SAARINEN, ARCHITECTS
BROOKS-BORG, ASSOCIATE ARCHITECTS**

BANK: bank counter

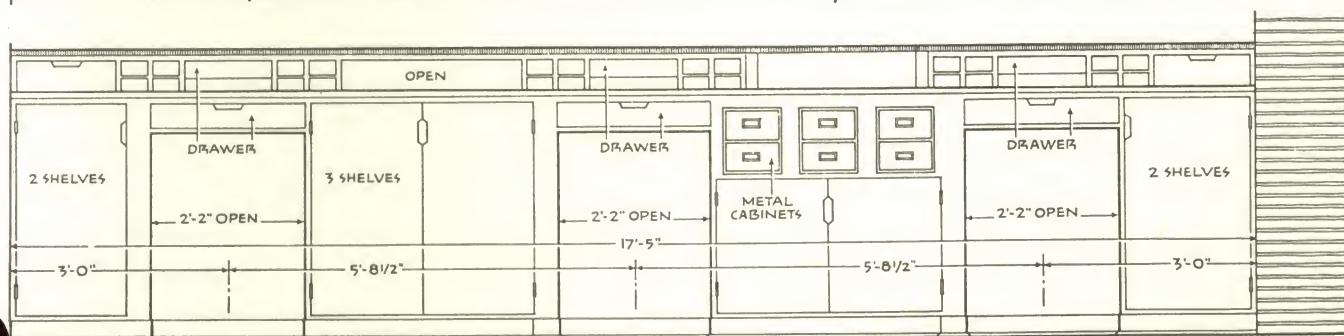
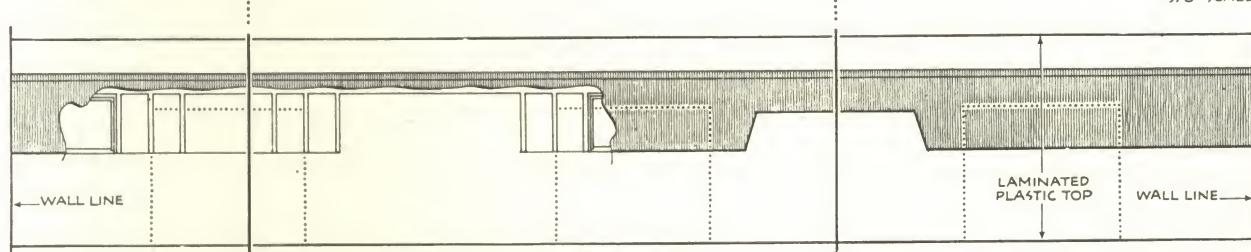


JAMES YARNELL



Sections 3/4" SCALE

*Plan and
Rear Elevation*
3/8" SCALE



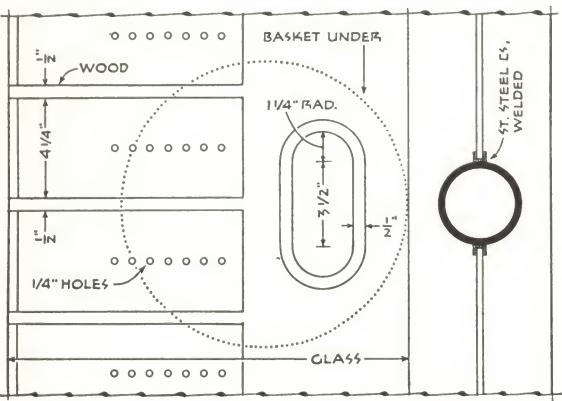
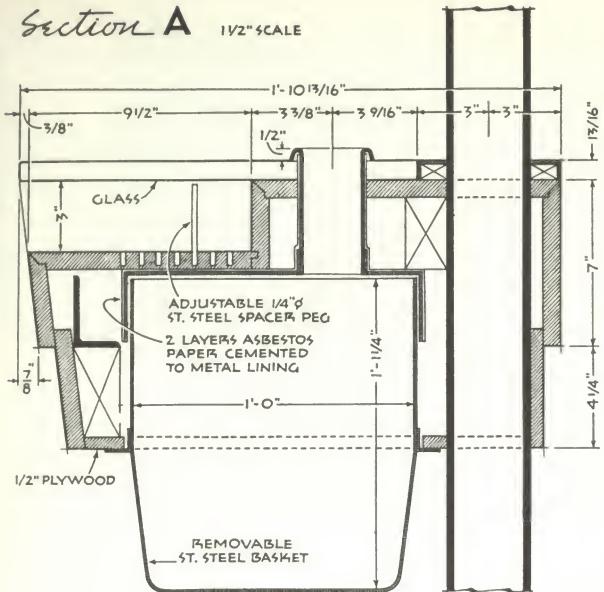
FIDELITY INVESTMENT COMPANY, Wichita, Kansas

Progressive Architecture

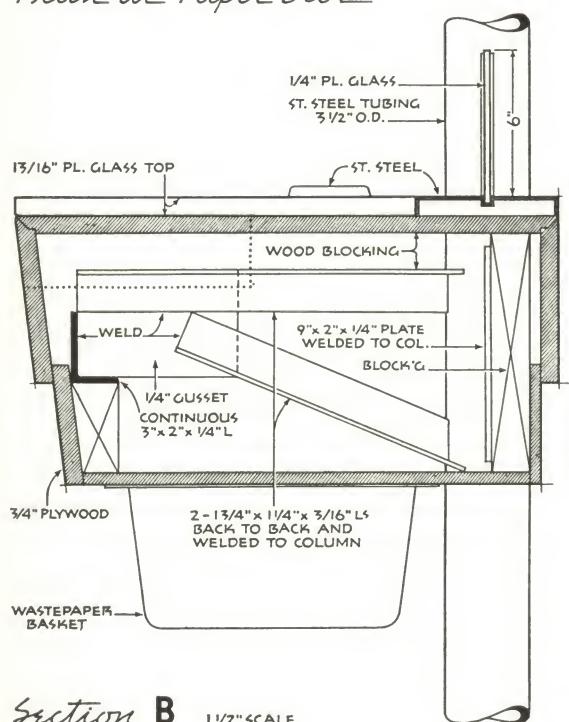
RAMEY, HIMES & BUCHNER ARCHITECTS

BANK: wall bank counter

Section A 1 1/2" SCALE



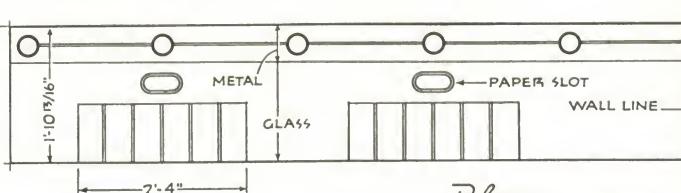
Plan at Paper Slot



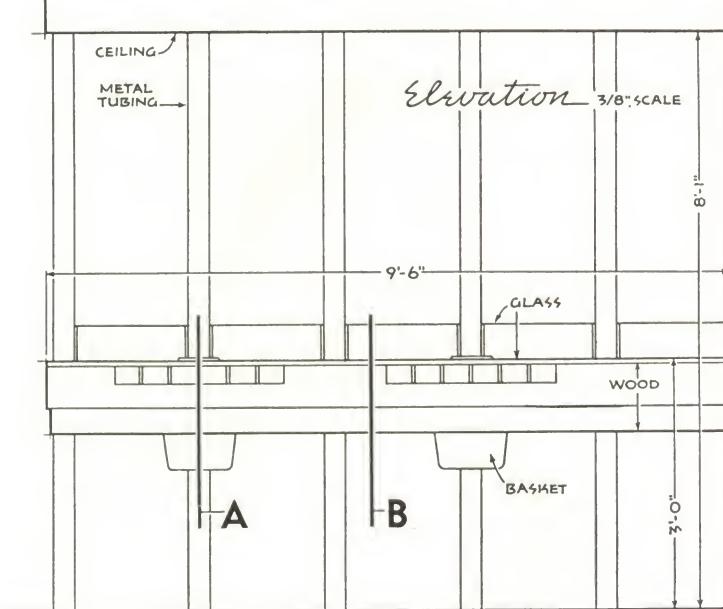
Section B 1 1/2" SCALE



R. MARVIN WILSON



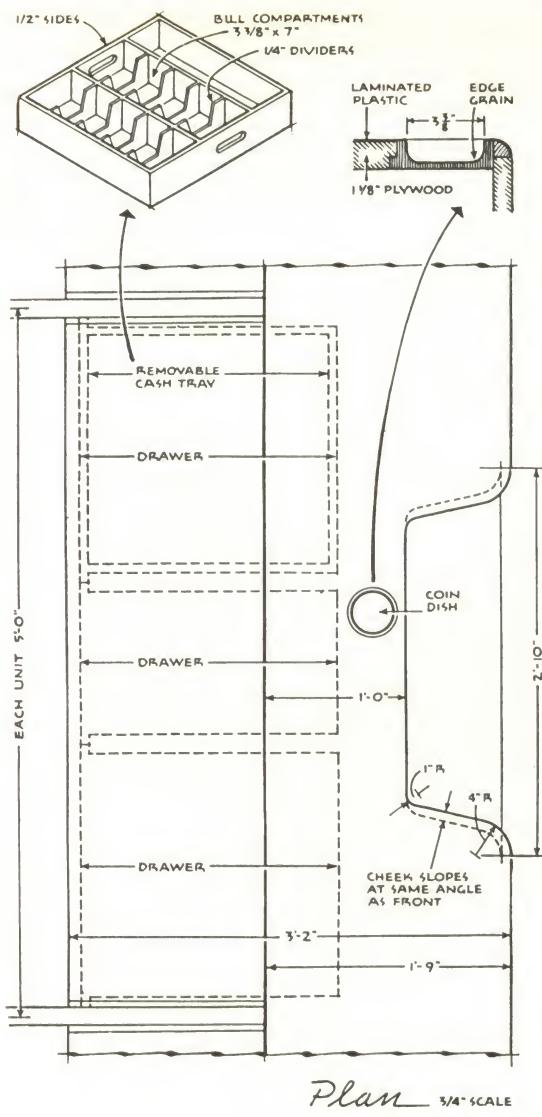
Plan 3/8" SCALE



CENTRAL NATIONAL BANK, Cleveland, Ohio

CONRAD, HAYS, SIMPSON & RUTH, ARCHITECTS

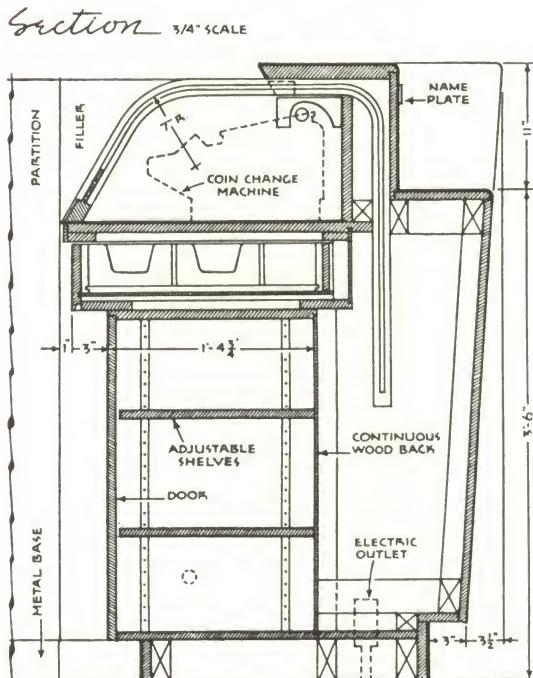
bank: teller's counter



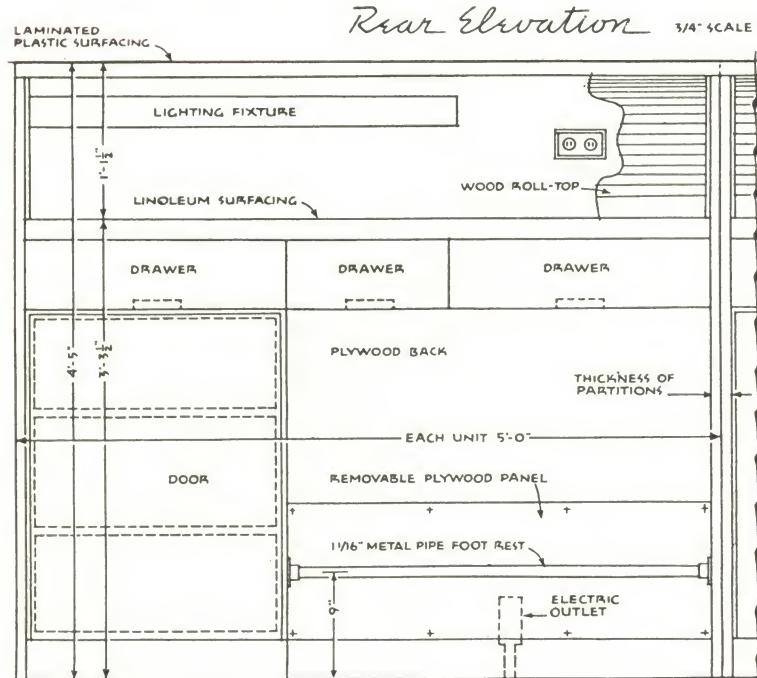
Plan 3/4" SCALE



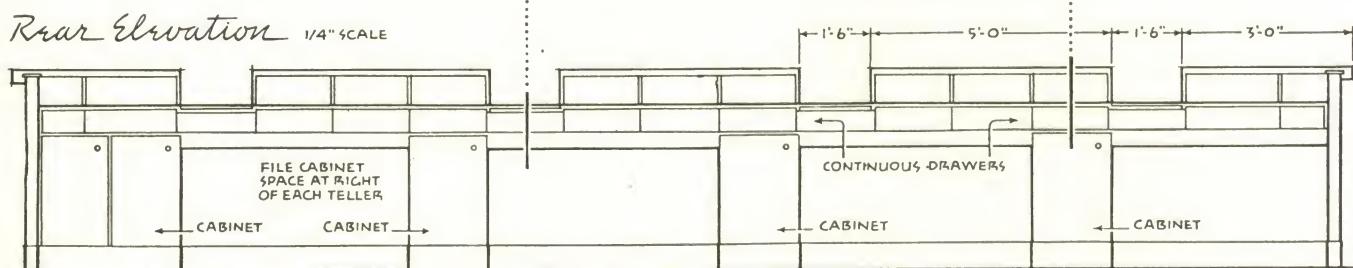
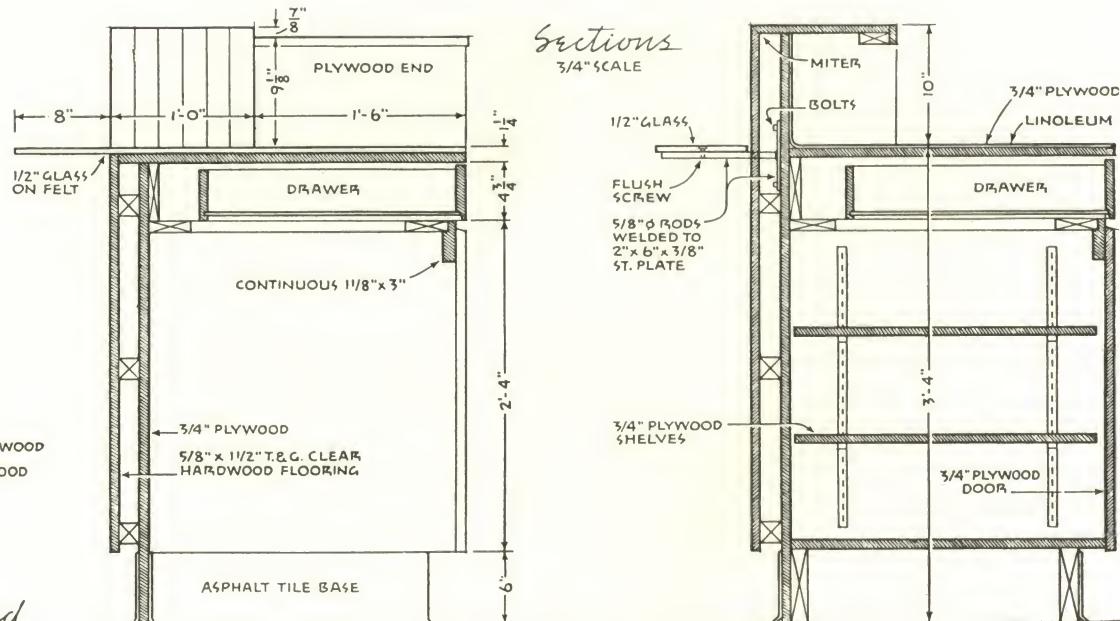
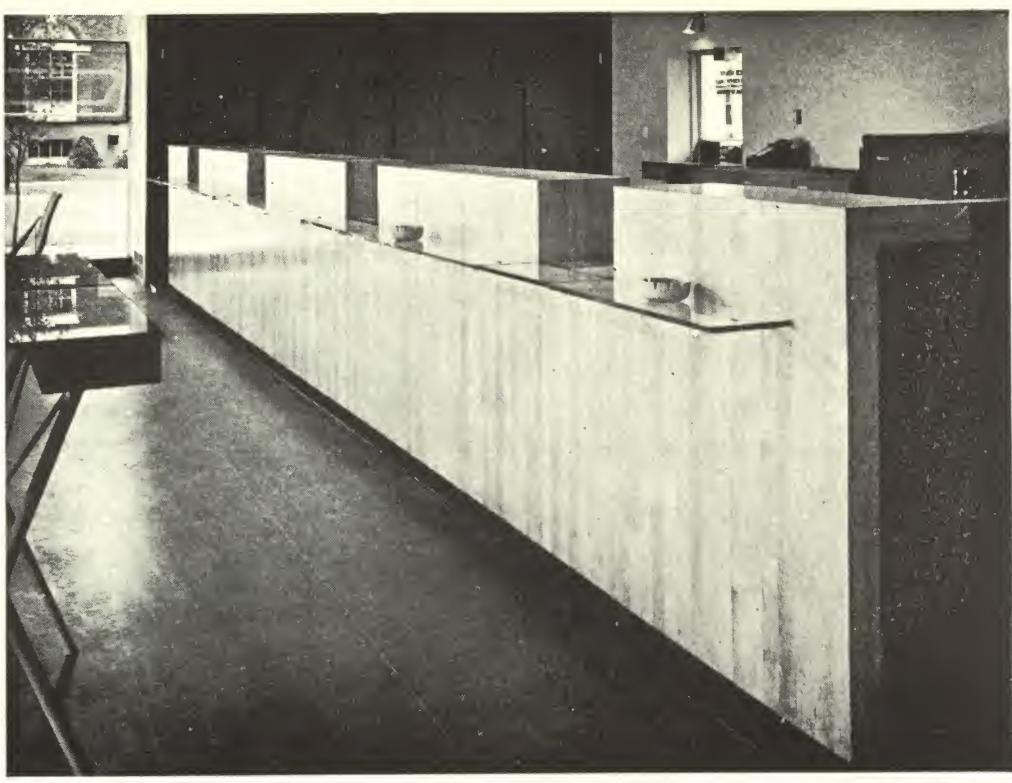
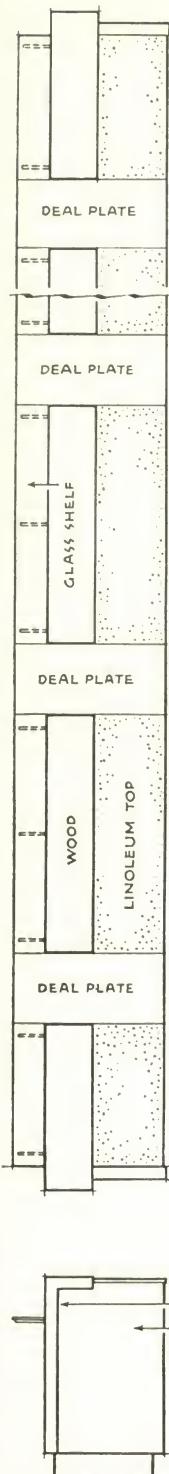
R. MARVIN WILSON



CENTRAL NATIONAL BANK, Cleveland, Ohio
Conrad, Hays, Simpson & Ruth, Architects



bank: teller's counter

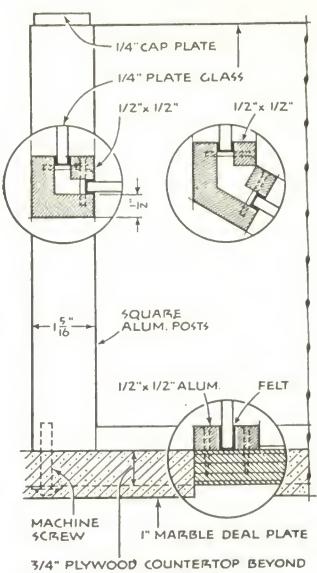


OTTAWA SAVINGS AND LOAN ASSN., Holland, Mich.

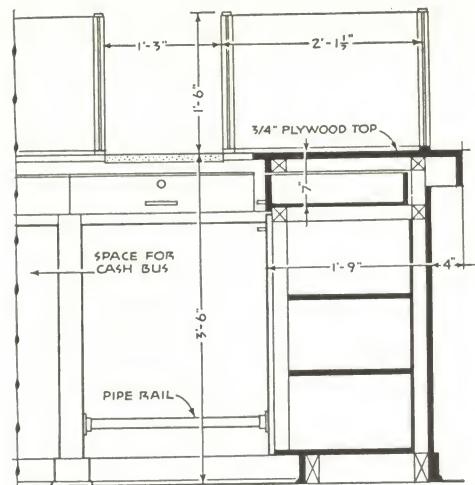
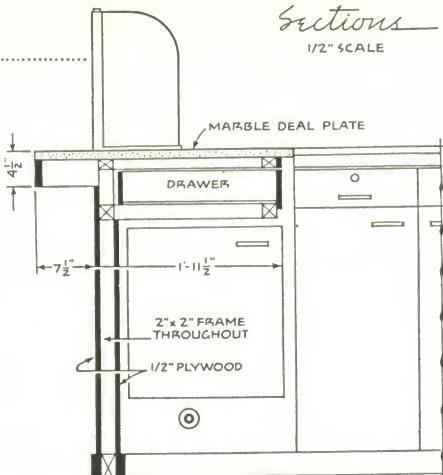
Harry Weese, John Van der Meulen, and Bruce Adams, Architects

Progressive Architecture

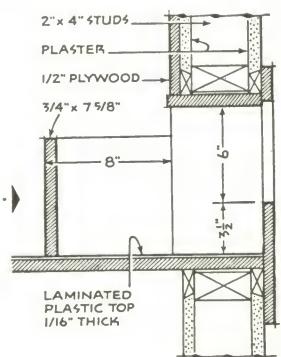
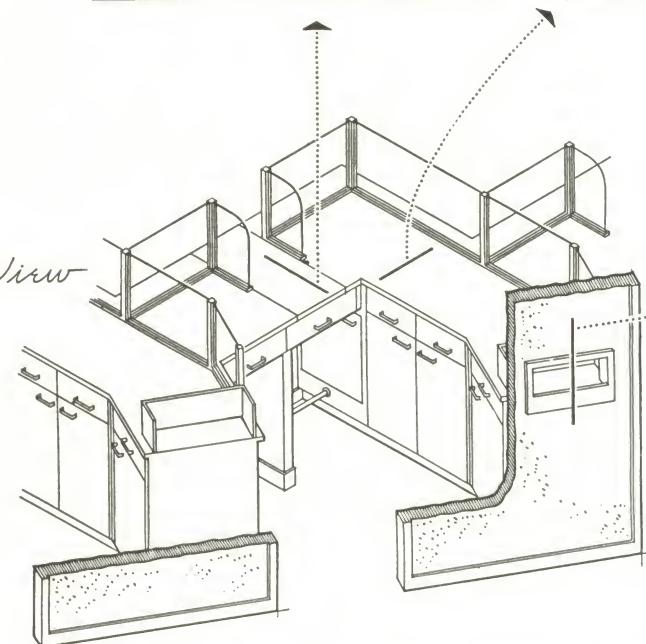
bank: teller's counter



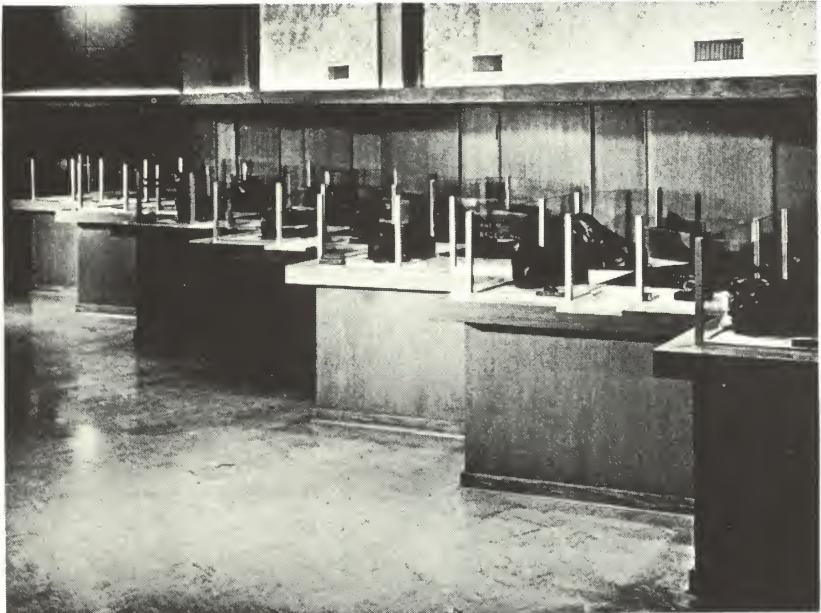
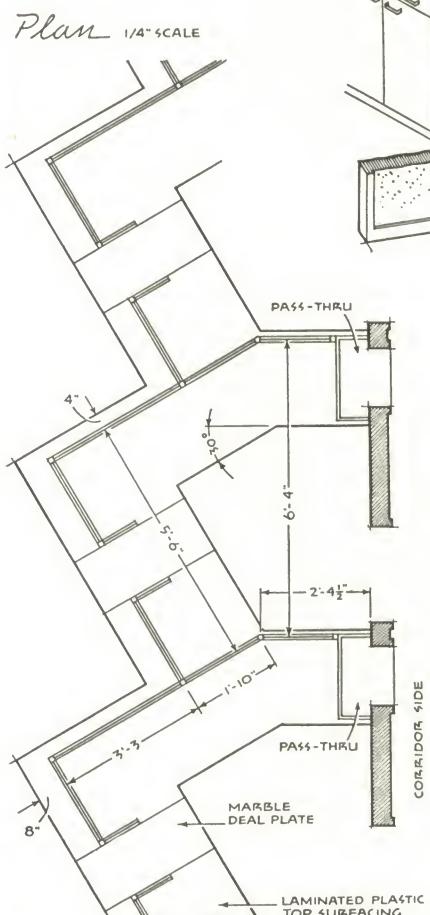
Sections



Railing Details



Pass-thru
Section



INDUSTRIAL STATE BANK BUILDING, Houston, Tex.

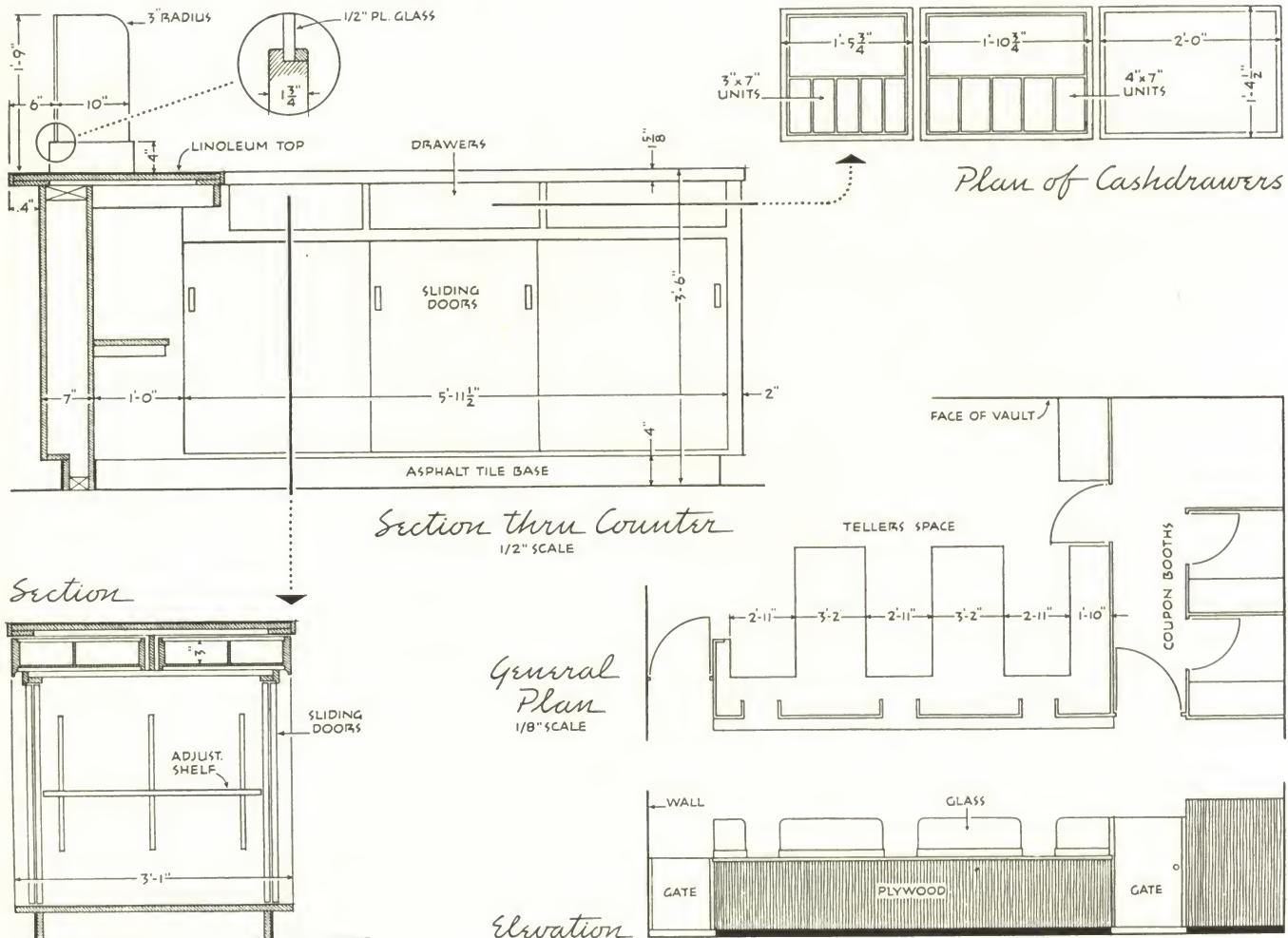
Mackie & Kamrath, Architects

Progressive Architecture

BANK: CHECK COUNTER



Hedrich-Blessing Studio



RIPON STATE BANK

Ripon, Ohio

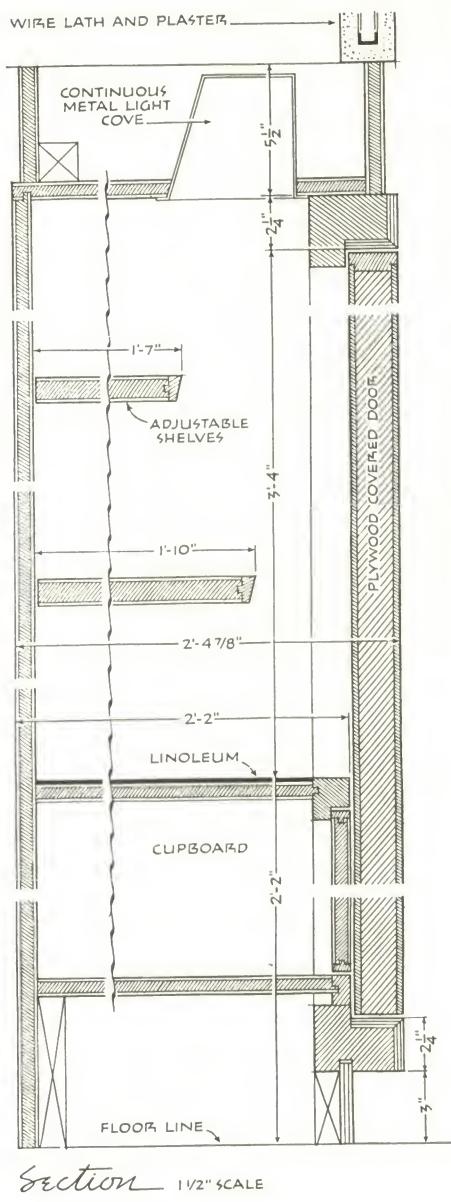
Progressive Architecture

AULER, IRION & WERTSCH, INC.

Architects

WHOLESALE OFFICES: CONVERTIBLE SALES-CONFERENCE ROOM

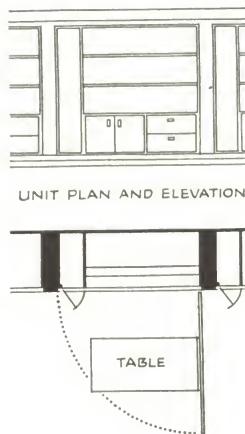
Irving Reinhart



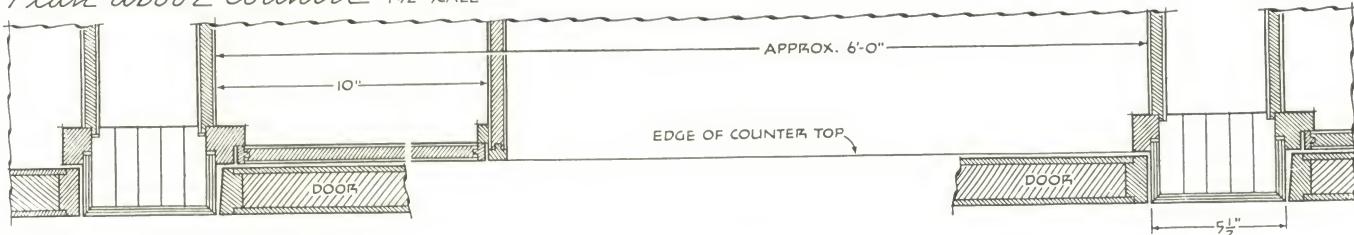
Section 1 1/2" SCALE



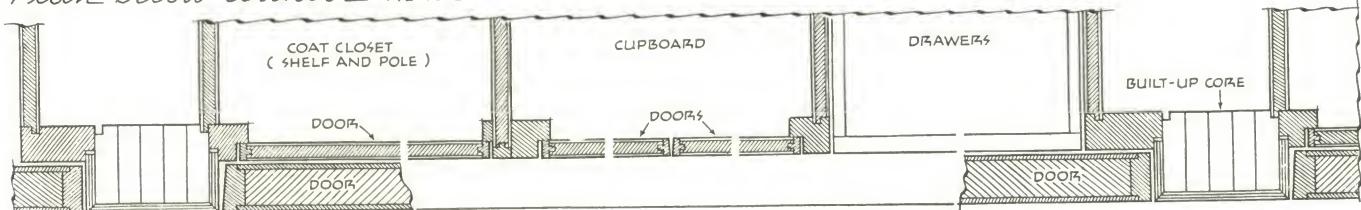
Problem: combination room for meetings and lingerie buyers' cubicles. *Solution:* hinged wall panels, open, form cubicles; closed, conceal stock, furniture.



Plan above Counter 1 1/2" SCALE



Plan below Counter 1 1/2" SCALE



WARNER BROS. CO., INC.

New York, New York

BEESTON-STOTT-PATTERSON

INDUSTRIAL DESIGNERS

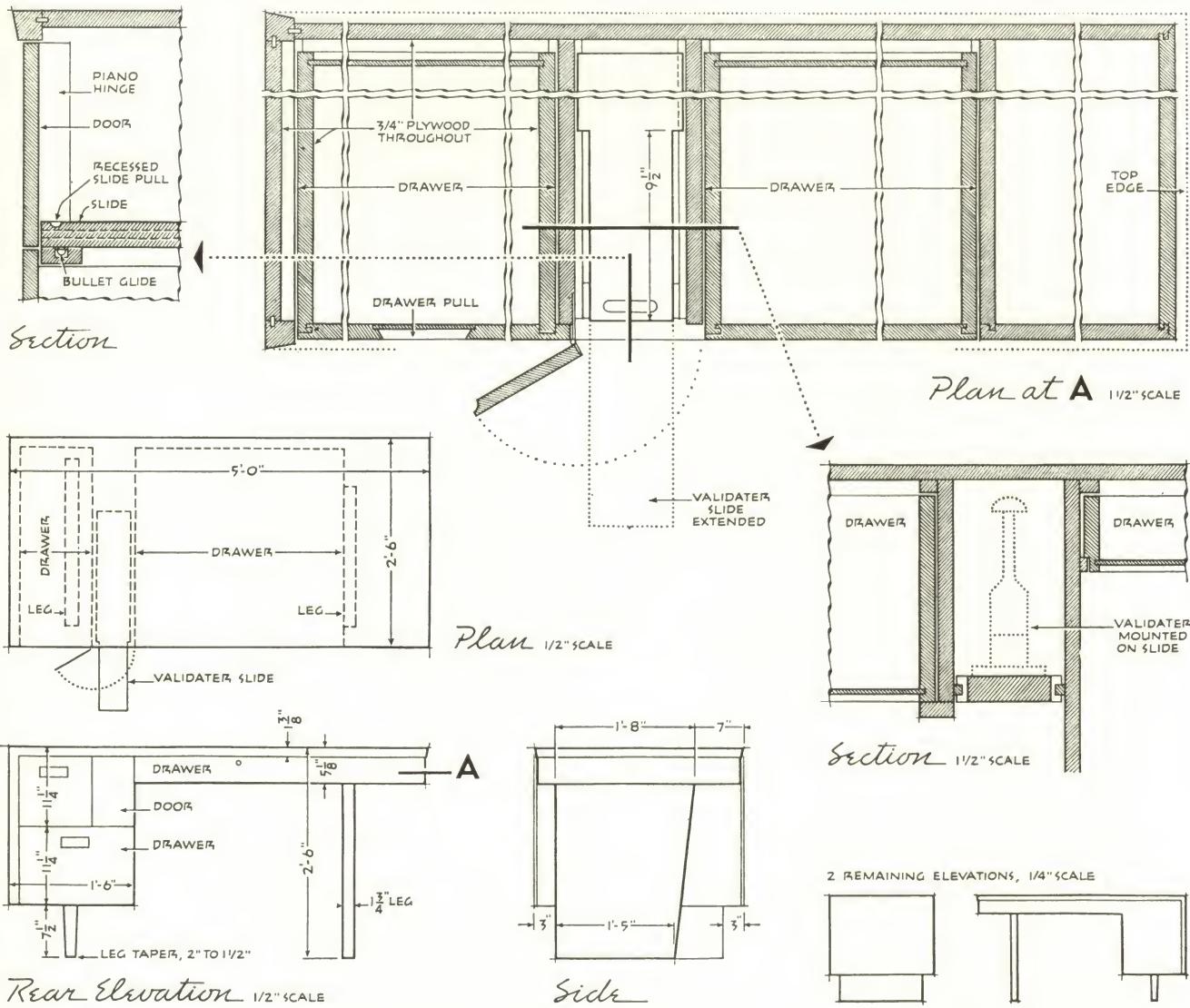
Selected Details

PA



OFFICE: DESK

Richard Garrison



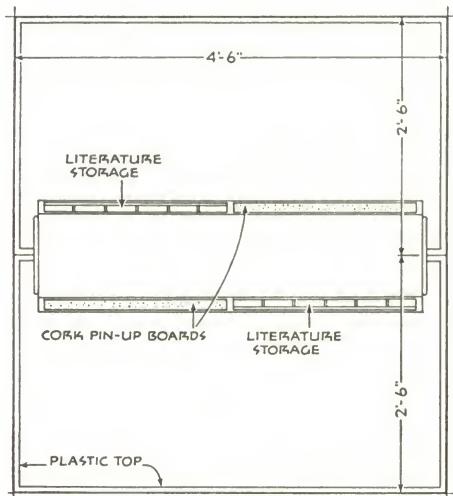
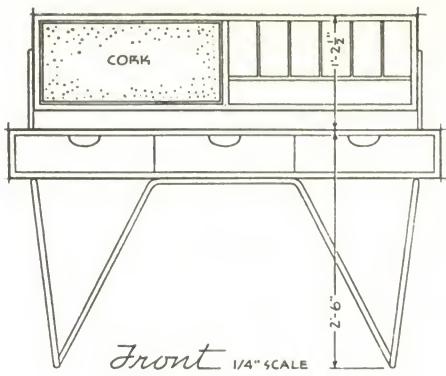
VENEZUELAN AIRLINES TICKET OFFICE

New York, New York

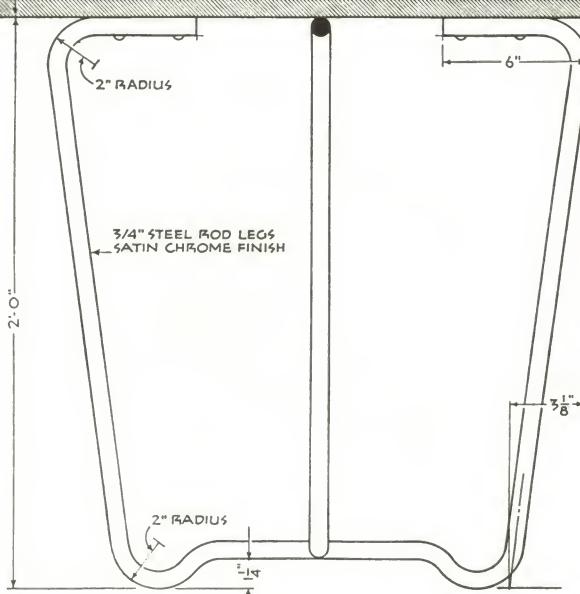
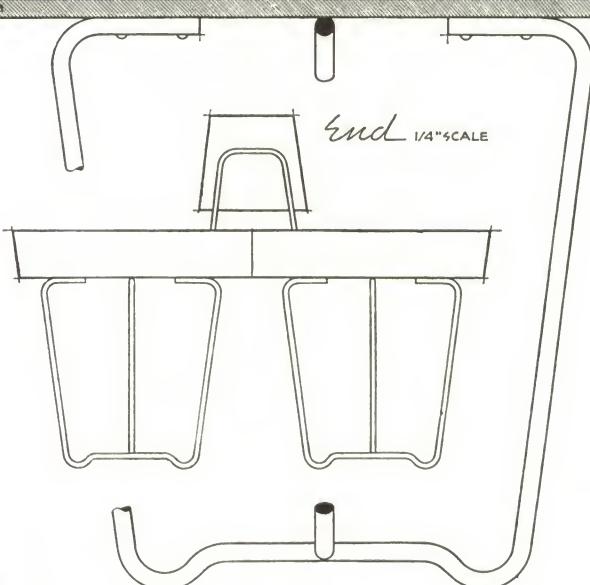
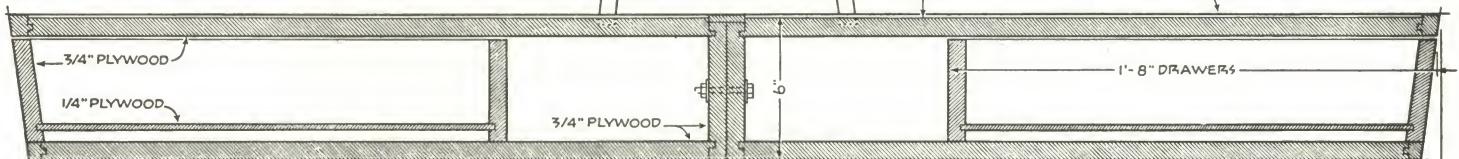
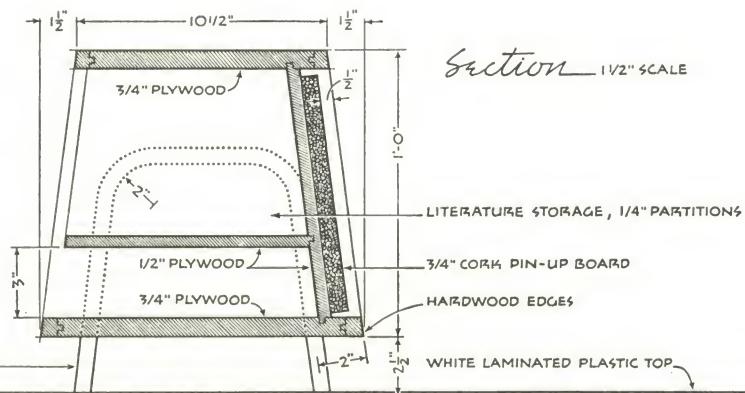
BEESTON-STOTT-PATTERSON

Designers

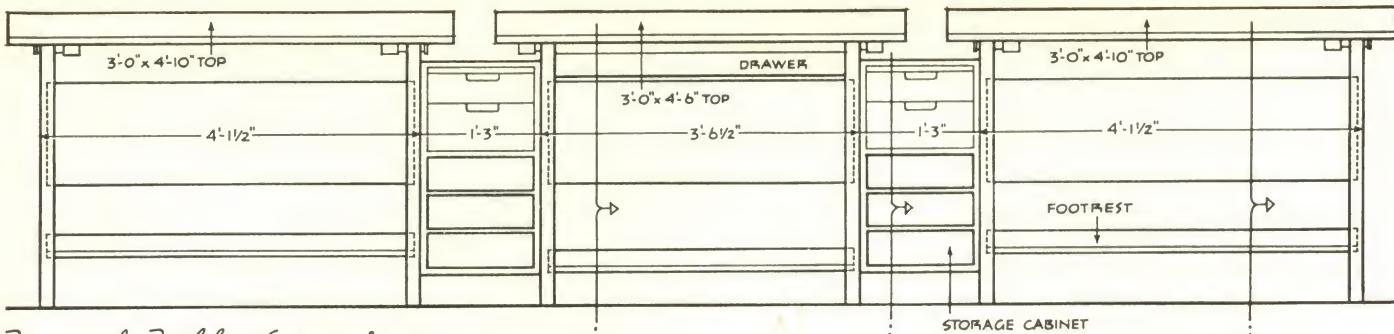
TRAVEL AGENCY: double desk



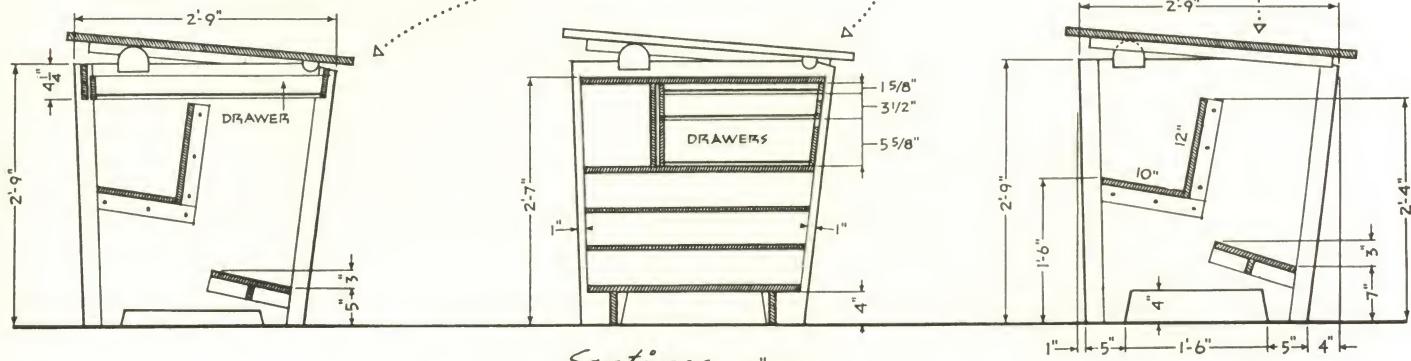
LIONEL FREEMAN : PICTOR



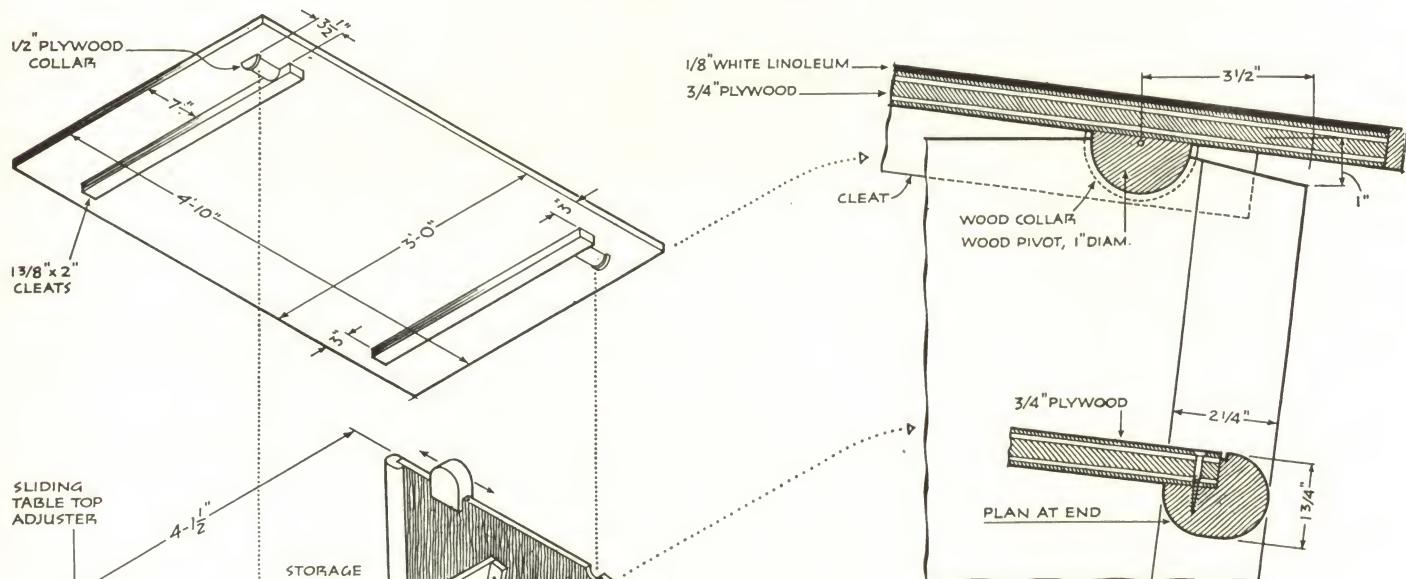
BRITISH RAILWAYS INC., New York, N. Y. SERGE CHERMAYEFF and KETCHUM, GINA & SHARP, ASSOCIATED ARCHITECTS
Progressive Architecture



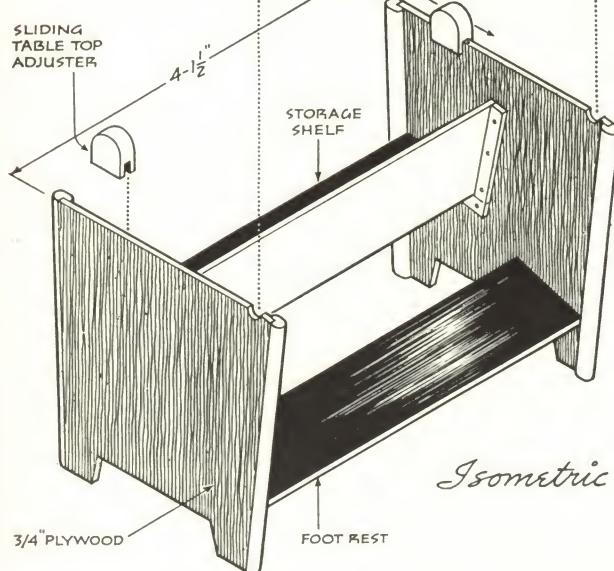
Typical Table Grouping 1/2" SCALE



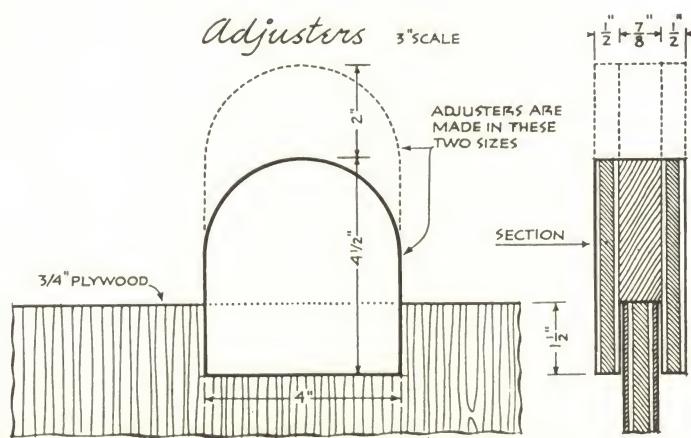
Sections 1/2" SCALE



Detail of Pivot 3" SCALE



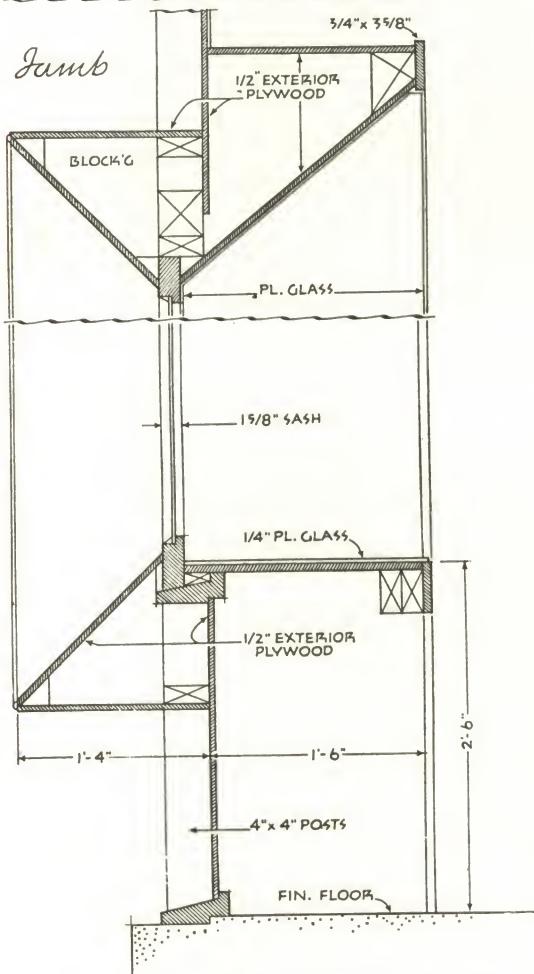
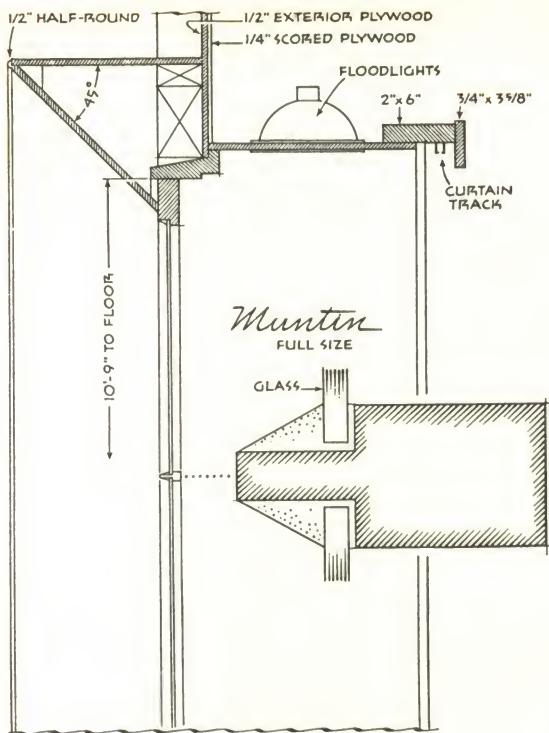
Isometric



Adjusters 3" SCALE

VAN DOREN - NOWLAND & SCHLADERMUNDT, Designers

SHOP: display window



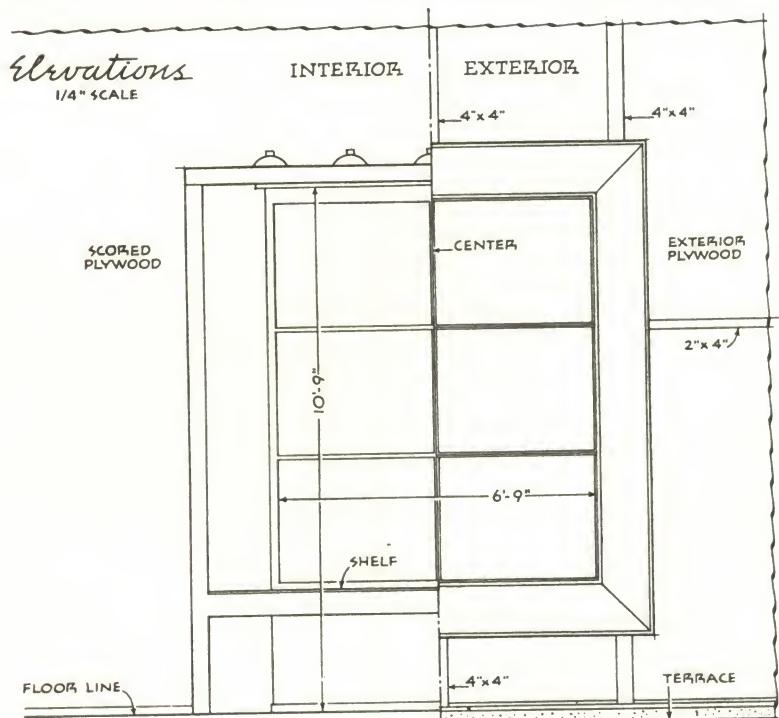
Section thru Window 3/4" SCALE

KAY FINCH CERAMIC STUDIO
Corona del Mar, California

Progressive Architecture



Photo - Julius Shulman



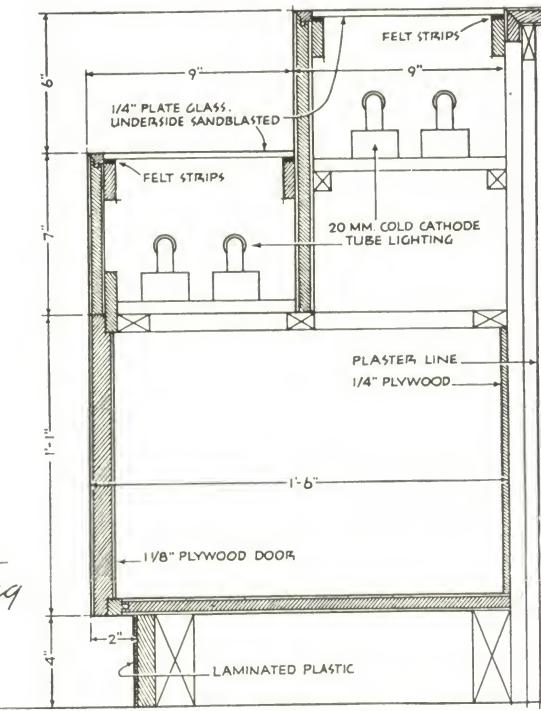
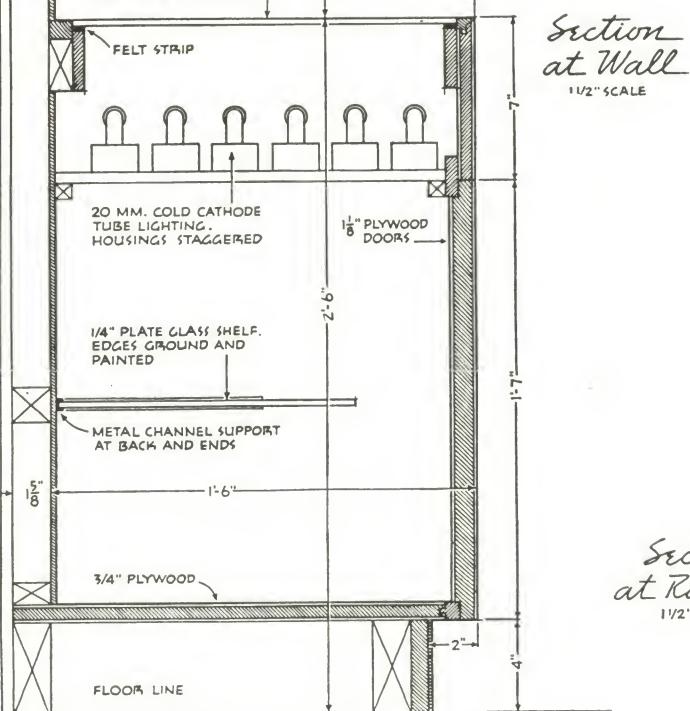
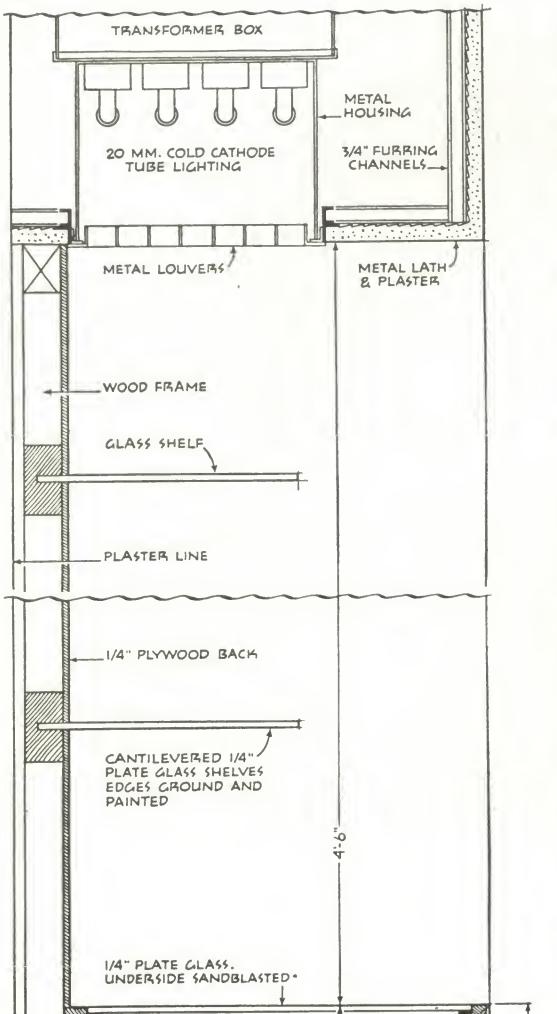
FRANK GRUY'S
Architect

Selected Details



SHOWROOM: DISPLAY SHELVES FOR GLASSWARE

Gottschalk & Betzer



LIBBEY GLASS DIVISION

OWENS-ILLINOIS GLASS CO., New York, New York

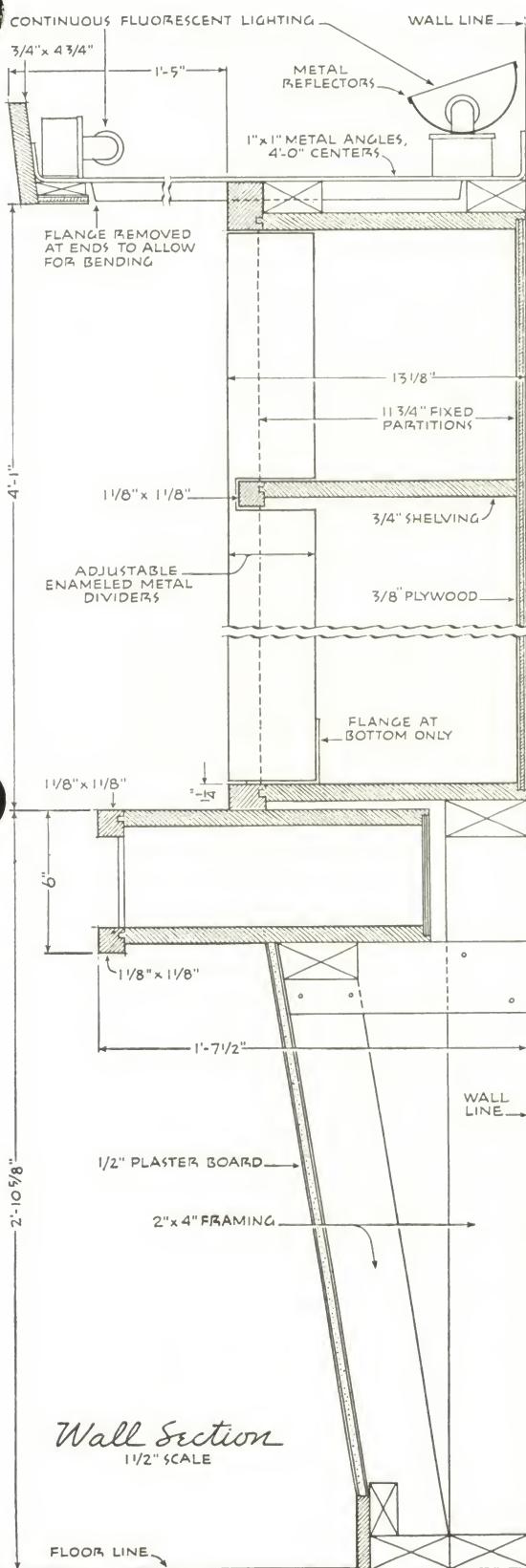
CARSON & LUNDIN

Architects

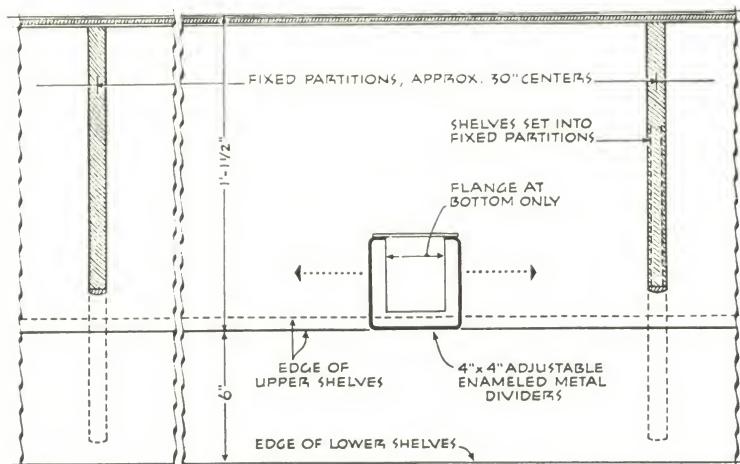
Selected Details

P

STORE: SHELVING



Plan through Shelving 1 1/2" SCALE



BOOK STORE
SAN FRANCISCO, CALIFORNIA

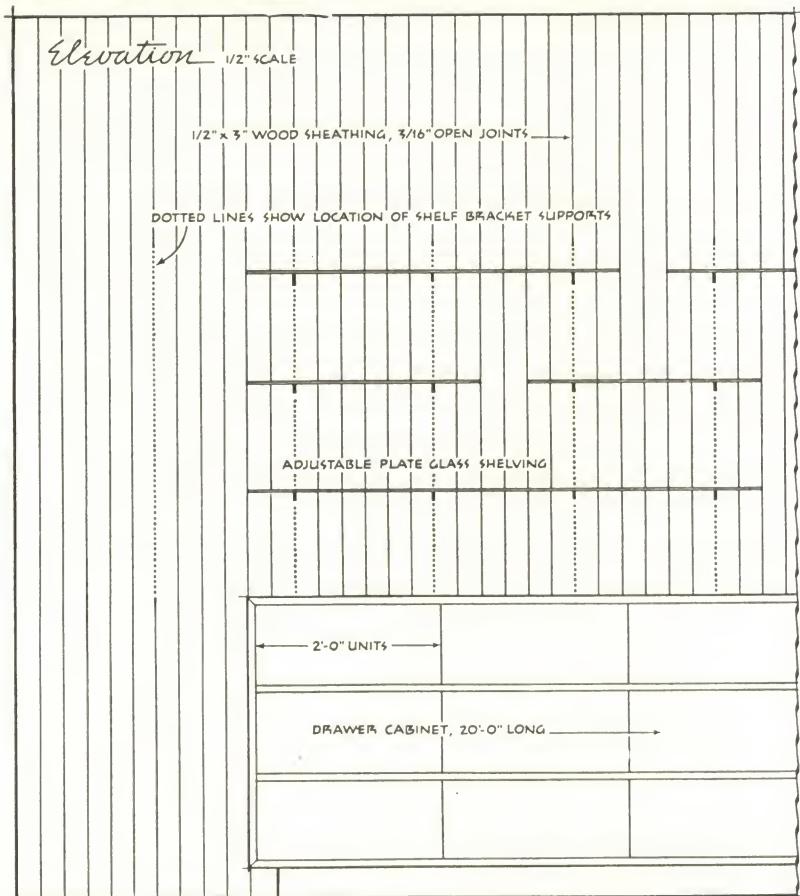
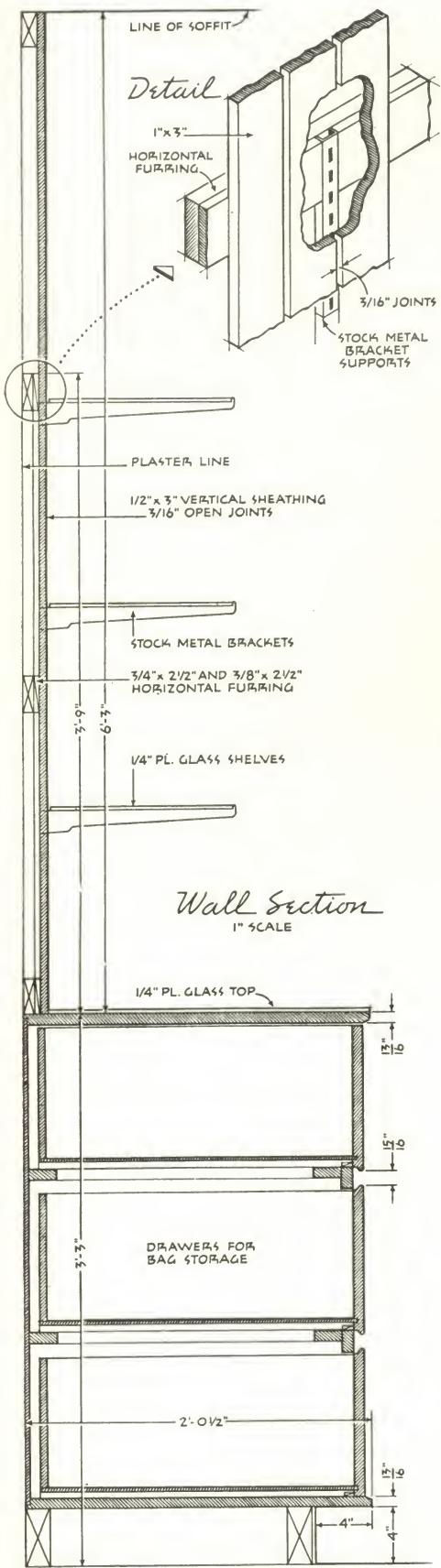
BOLTON WHITE
Architect

Selected Details



STORE: DISPLAY WALL

Lionel Freedman: Pictorial Services



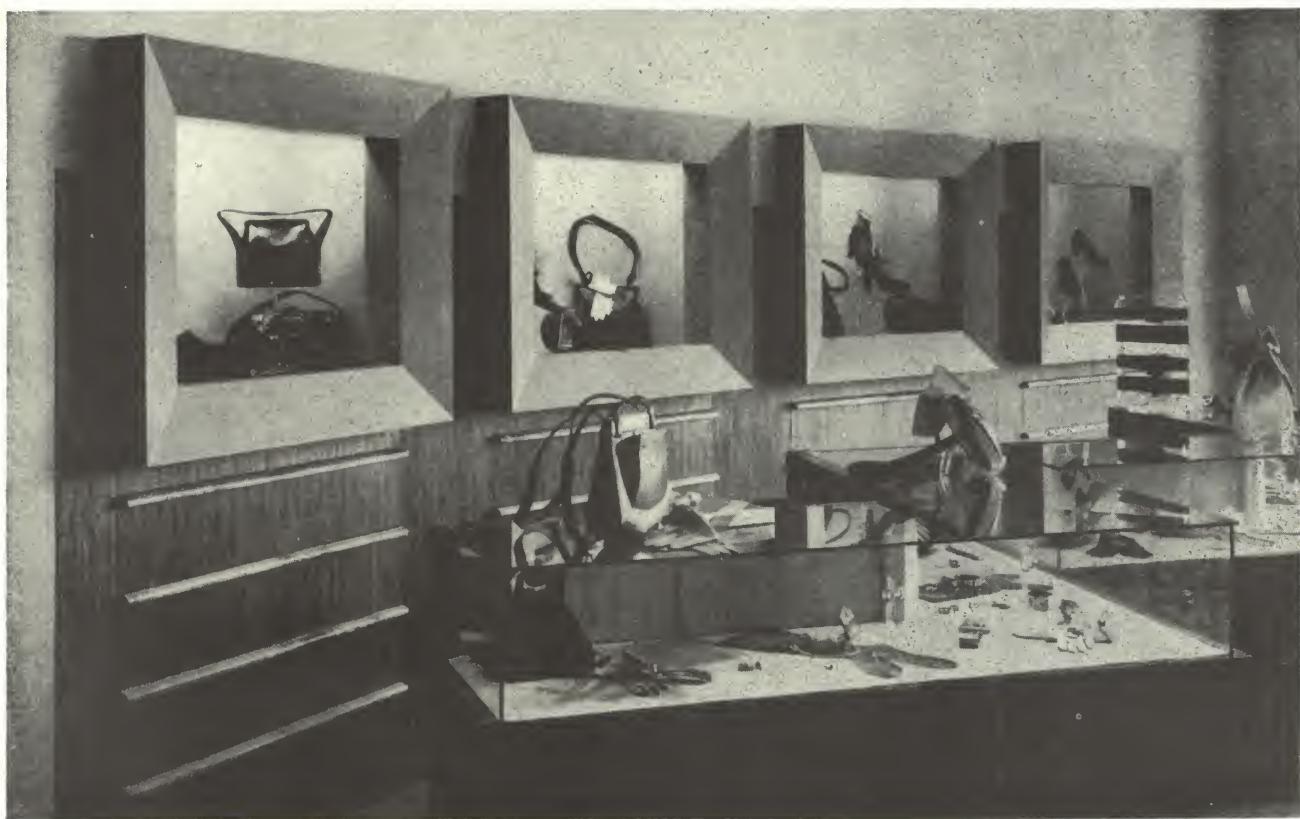
PLYMOUTH SPECIALTY SHOP
New York, N. Y.

KETCHUM, GINA & SHARP
Architects

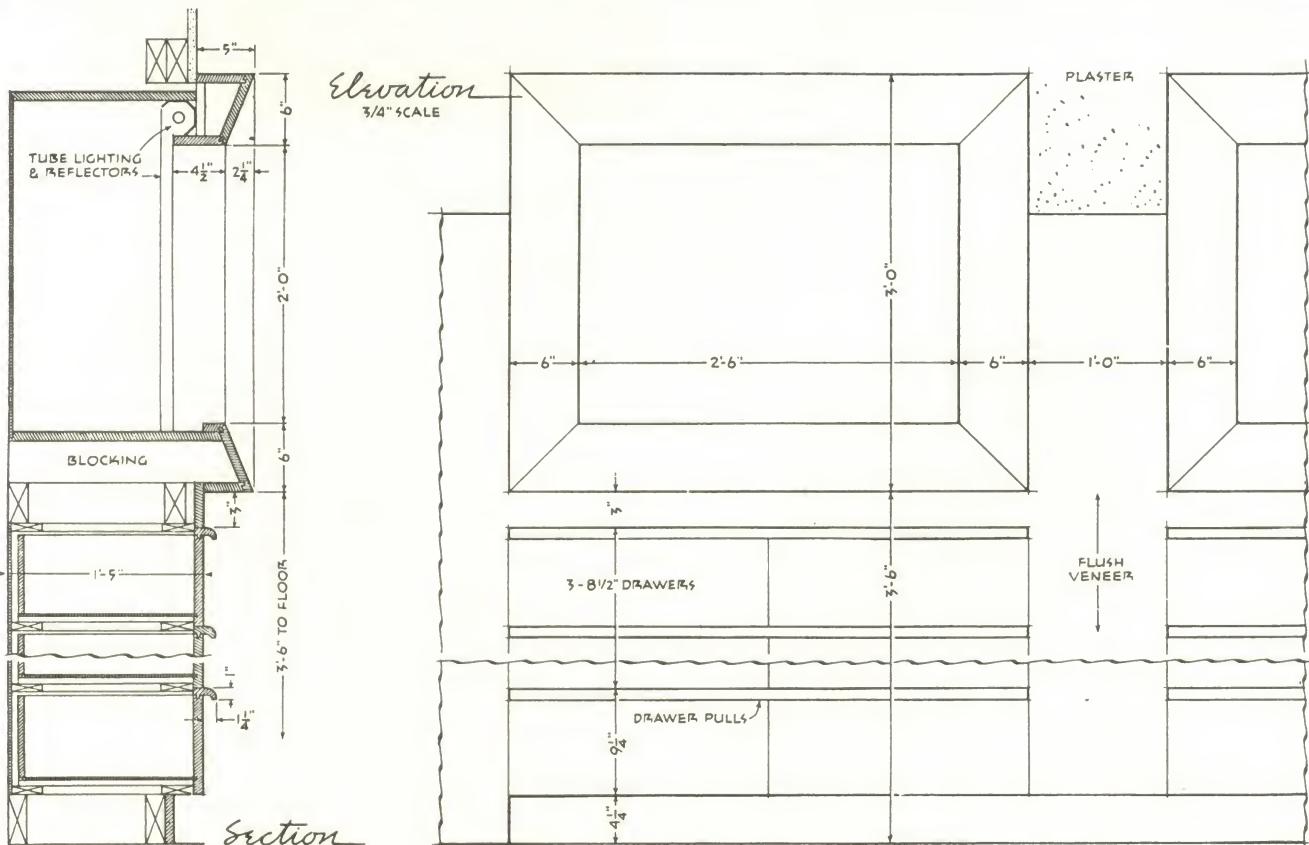
Selected Details

P

STORE: DISPLAY CASES



Floyd Ray



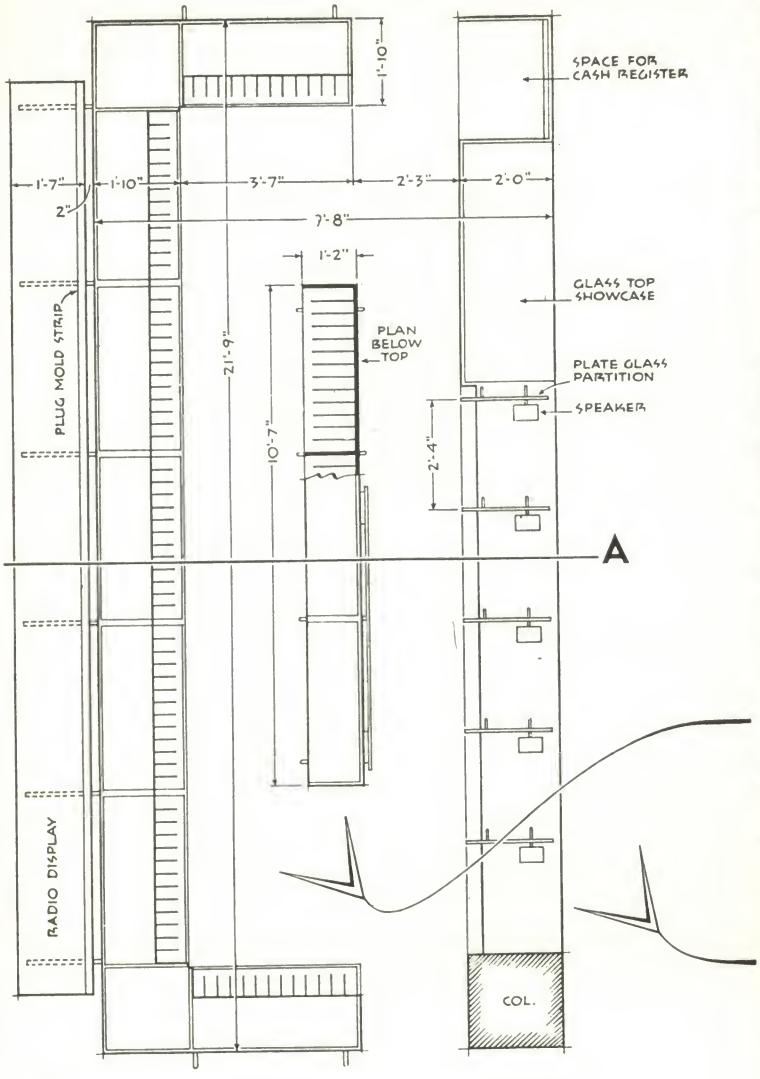
I. MILLER STORE

Long Beach, California

KENNETH S. WING

Architect

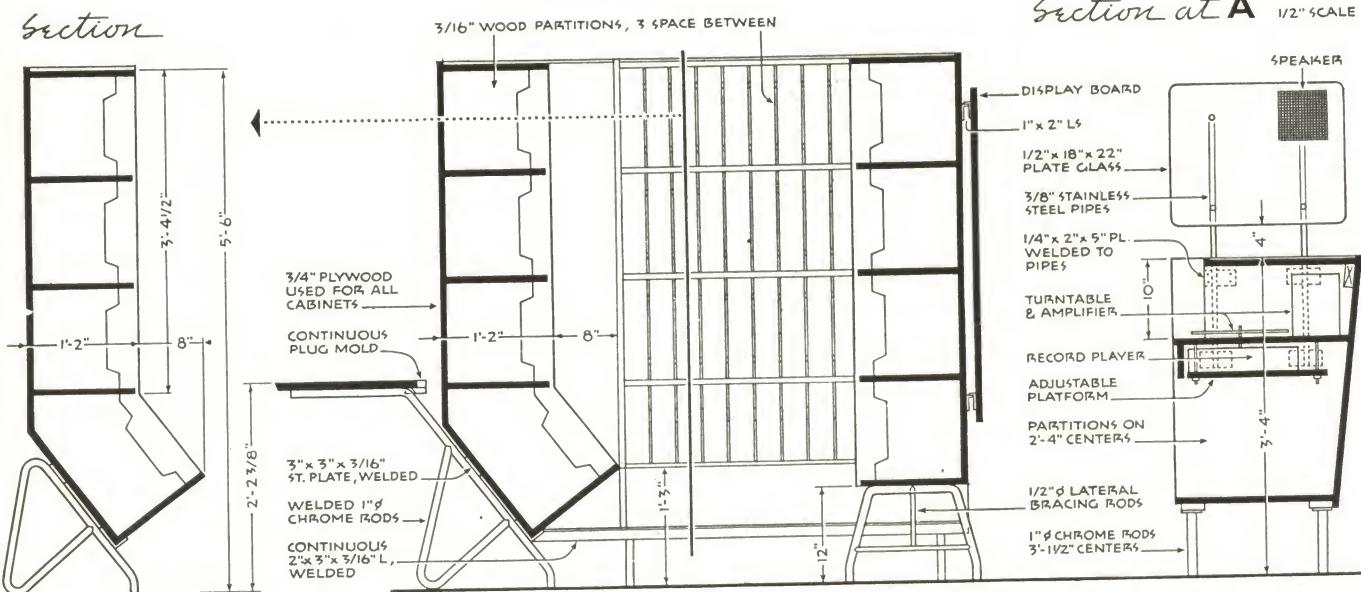
DEPARTMENT STORE: record listening counter and storage unit



Plan 1/4" SCALE



Section



DAVISON-PAXON STORE,
Atlanta, Georgia

HAROLD M. HEATLEY AND KETCHUM, GINA & SHARP, ASSOCIATED ARCHITECTS,
JOSEPH AMISANO, DESIGN PROJECT CHIEF

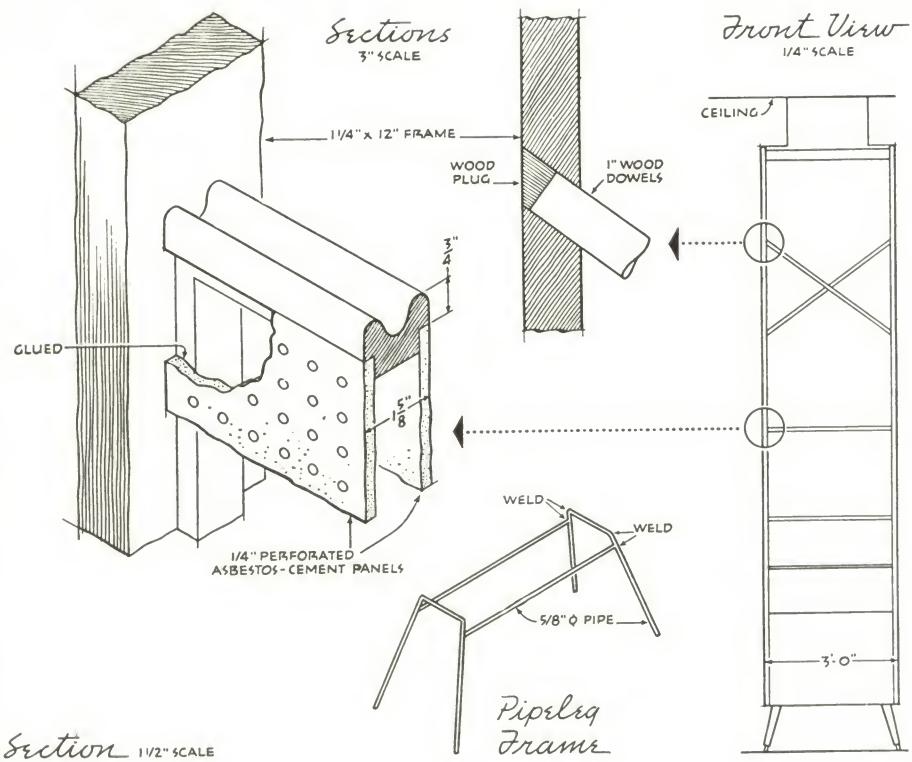
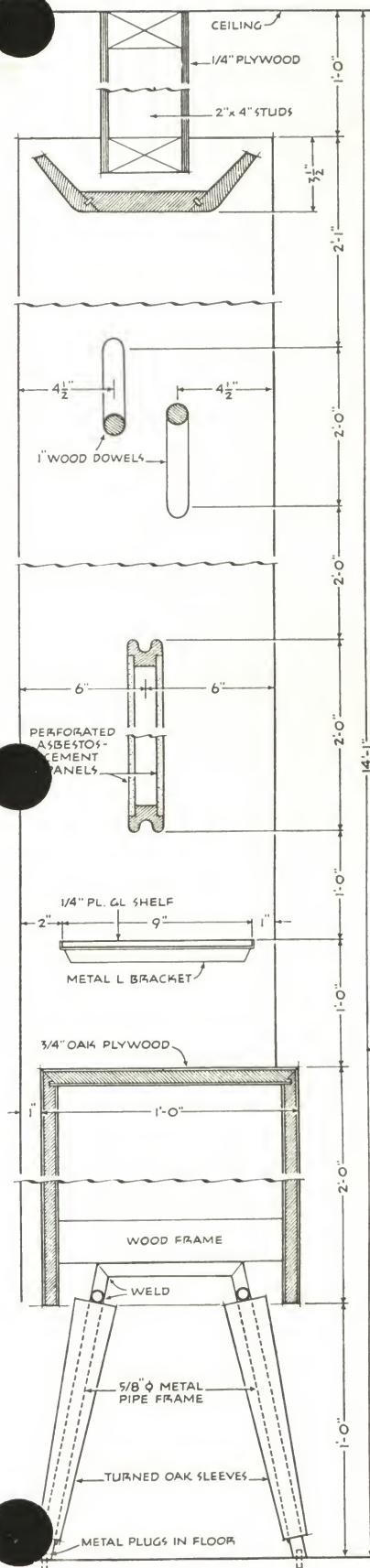
Selected Details



STORE: SHOE DISPLAY UNIT



Paul Peters

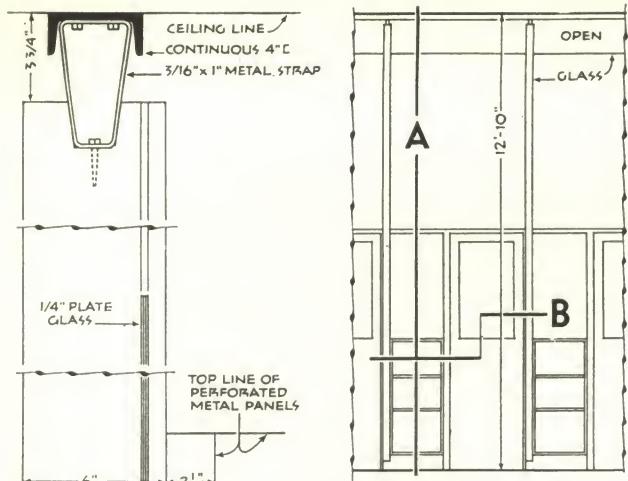


FOLEY'S DEPARTMENT STORE

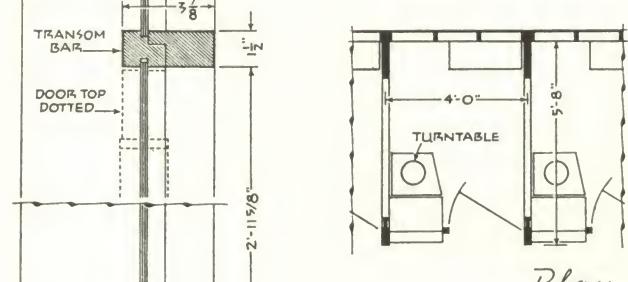
Houston, Texas

RAYMOND LOEWY ASSOCIATES

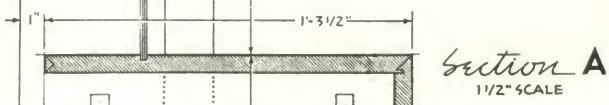
Retail Planners and Designers



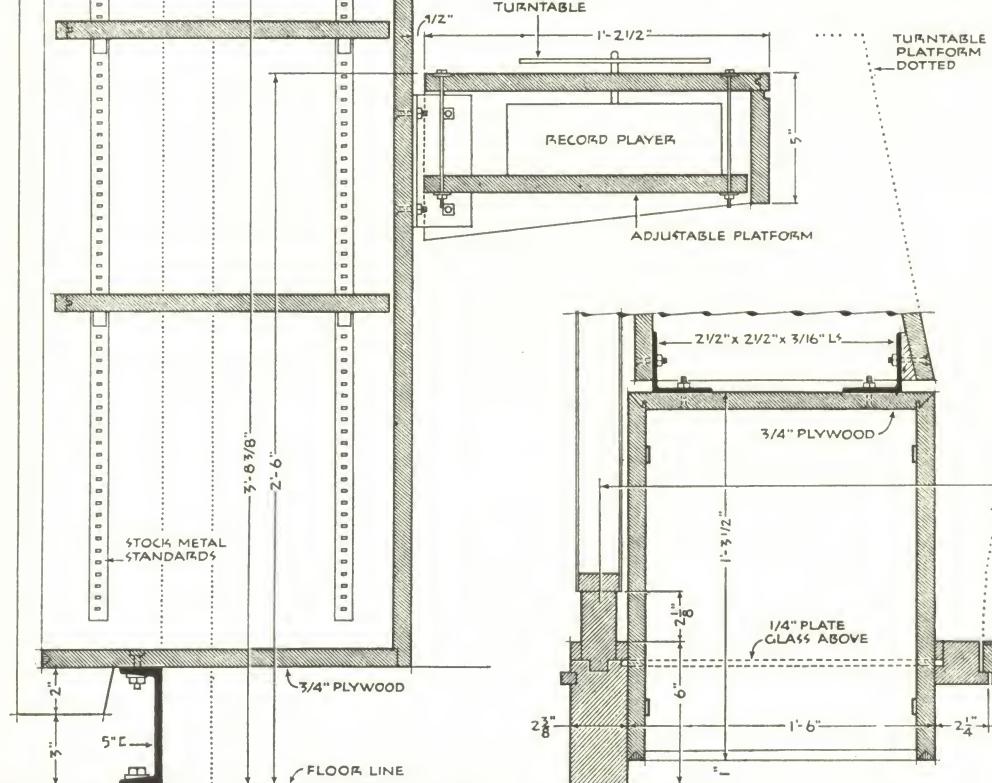
Elevation 3/16" SCALE



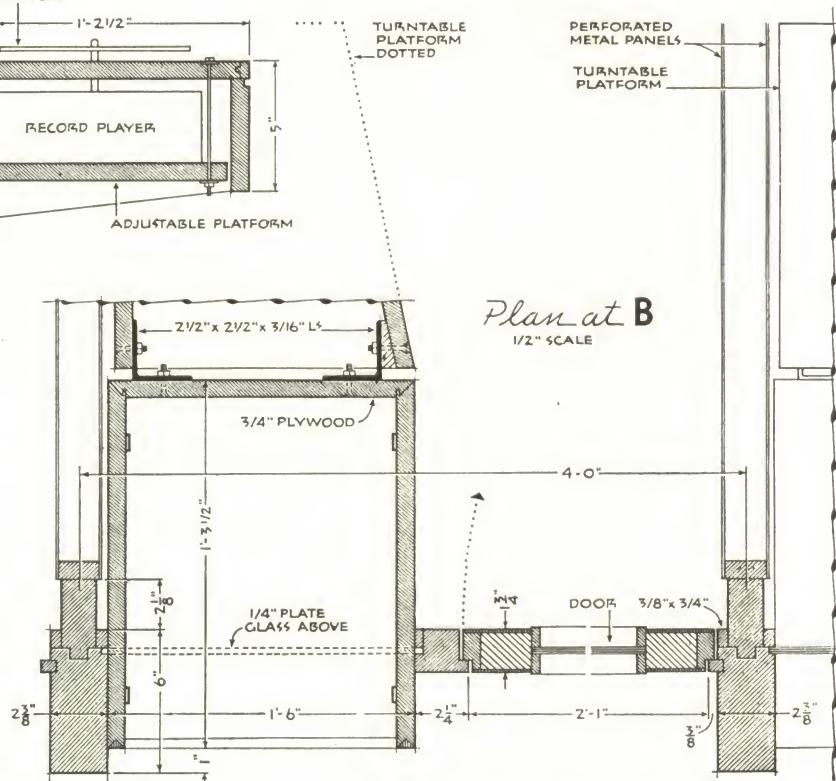
Plan



Section A
1 1/2" SCALE



Plan at B
1/2" SCALE



**DAVISON-PAXON STORE,
Atlanta, Georgia**

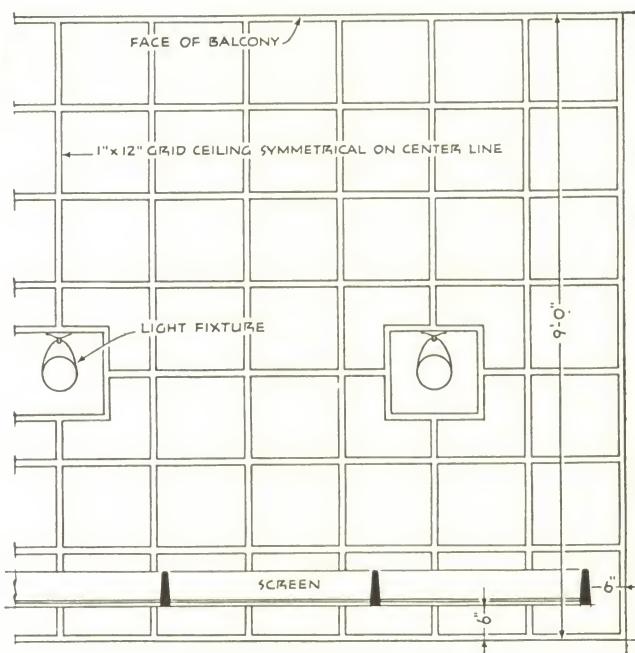
Progressive Architecture

**HAROLD M. HEATLEY AND KETCHUM, GINA & SHARP, ASSOCIATED ARCHITECTS,
JOSEPH AMISANO, DESIGN PROJECT CHIEF**

Selected Details

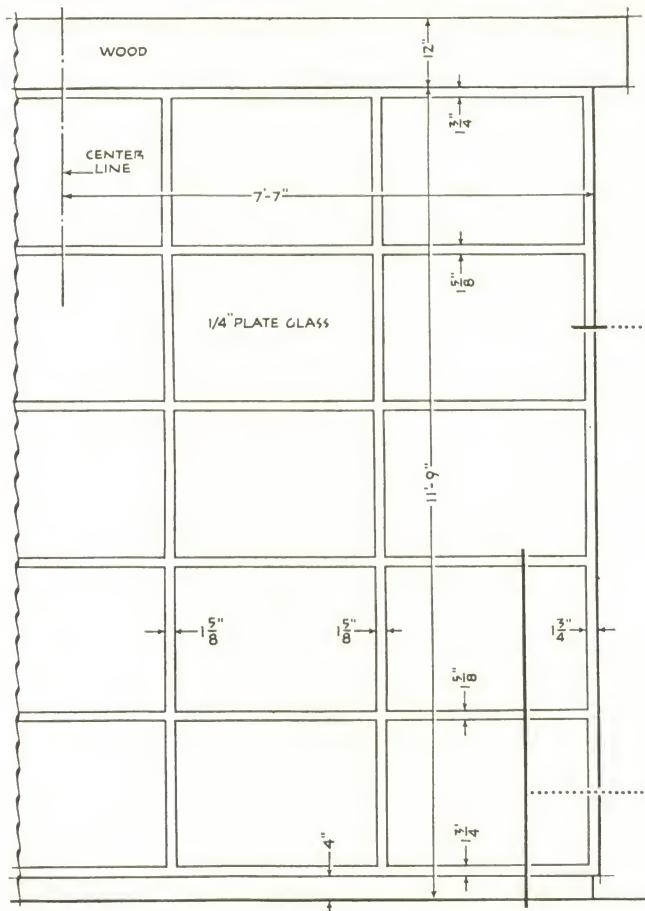
P

STORE: DISPLAY SCREEN

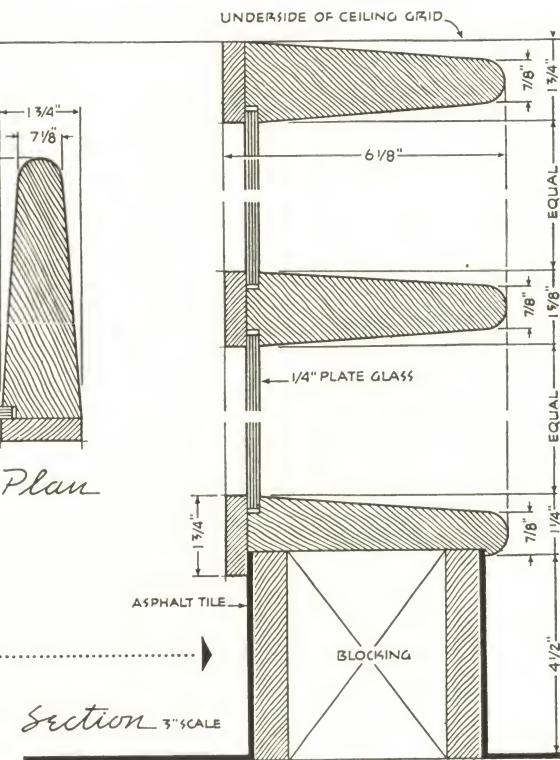


Reflected Plan 3/8" SCALE.

Elevation 3/8" SCALE

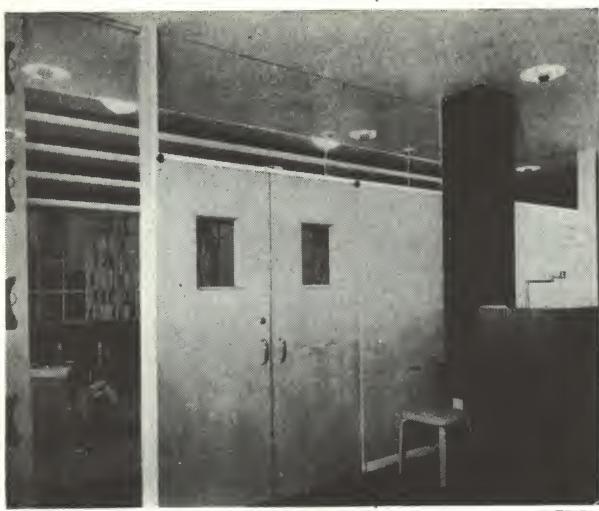


P. A. Dearborn



CRAWFORD'S STORE
Philadelphia, Pennsylvania

GEORGE NEFF
Architect

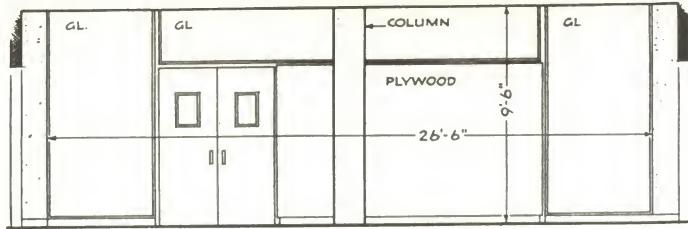


AFTER

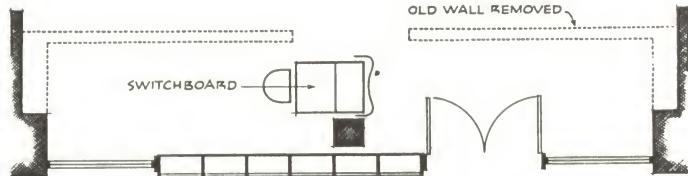


BEFORE

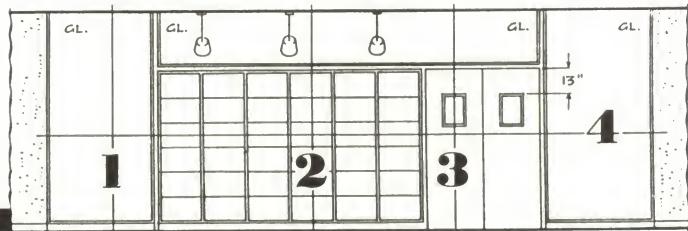
ARTEX-PASCOE Designers. JEDD STOW REISNER, Architect, Associated



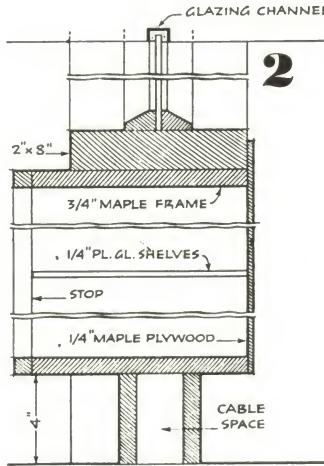
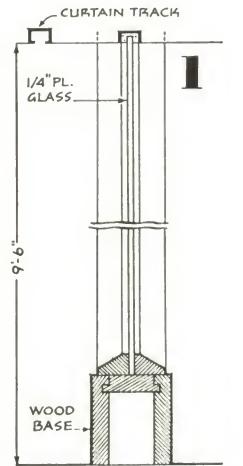
Lobby Elevation 1/8" SCALE



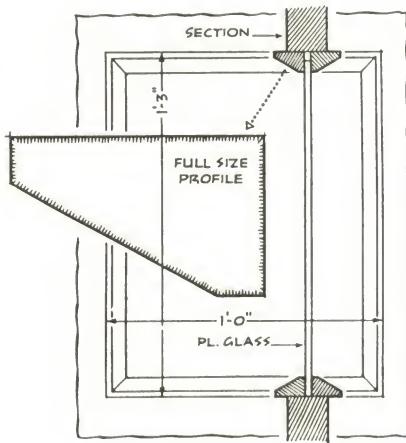
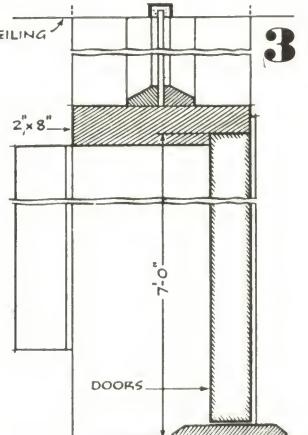
Plan 1/8" SCALE



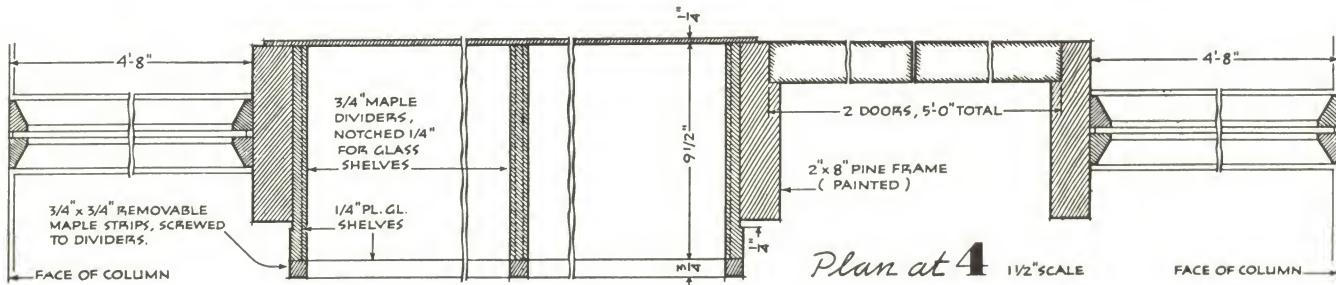
Elevation 1/8" SCALE



Sections 1 1/2" SCALE



Door Panel 1 1/2" SCALE

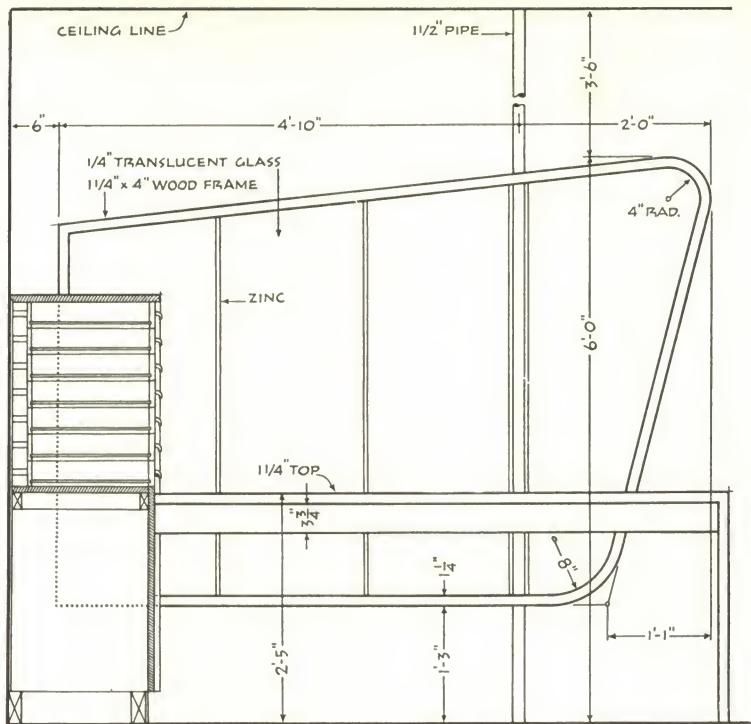


Plan at 4 1 1/2" SCALE

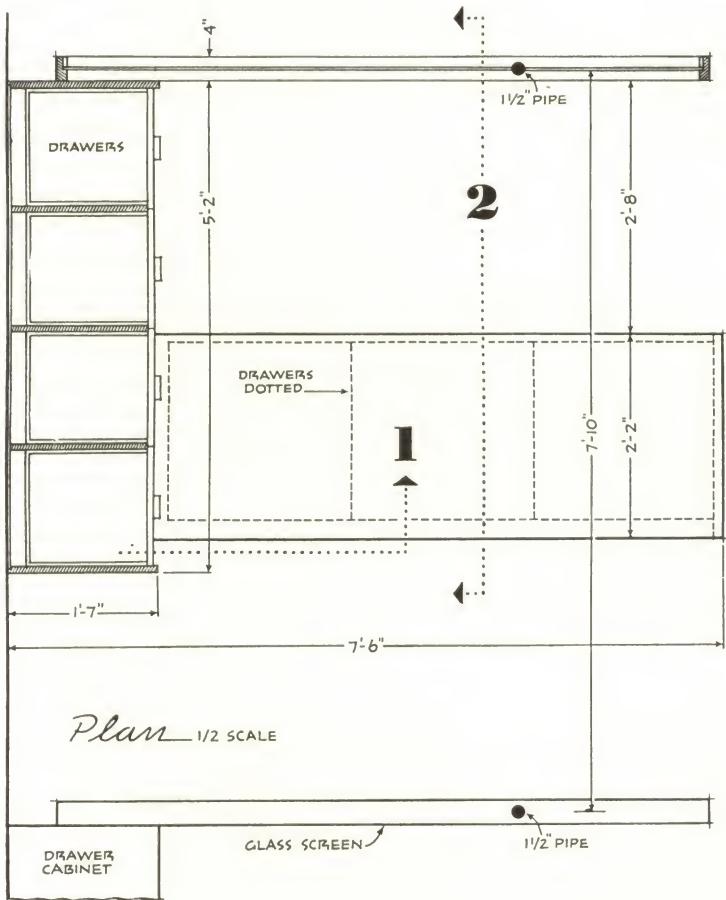
FACE OF COLUMN

DISPLAY PARTITION

(PHOTO on preceding page) - C

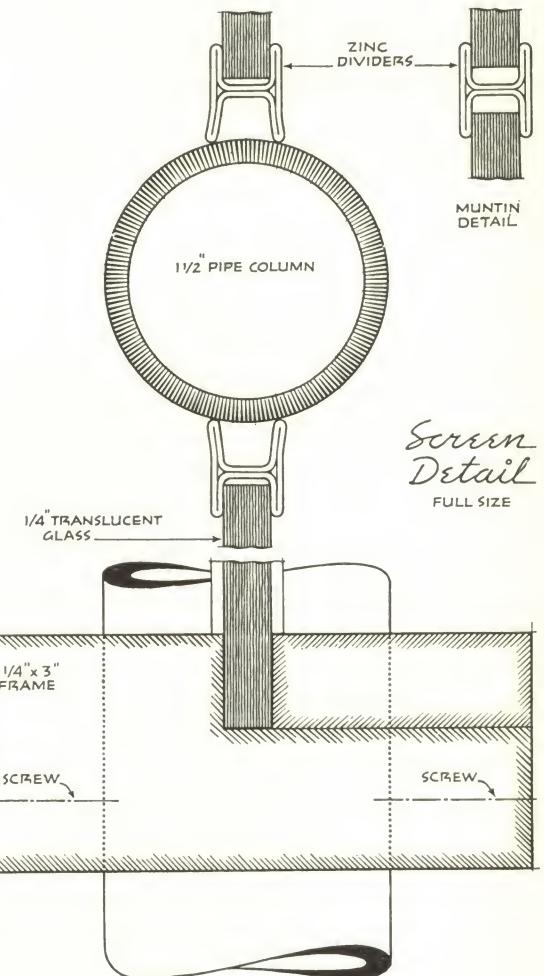
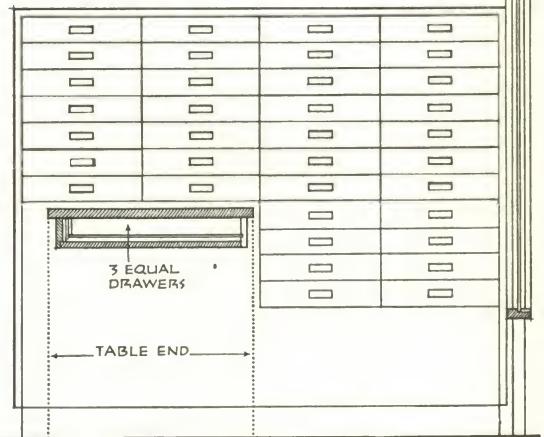


Section 1 1/2" SCALE



Plan 1/2 SCALE

Section 2 1/2" SCALE



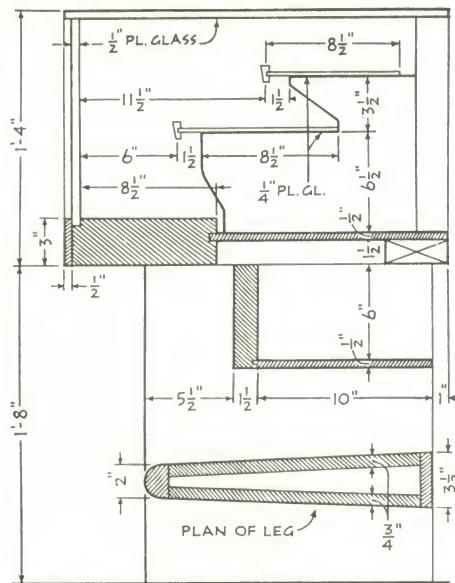
WHOLESALE GLOVE DISPLAY BOOTH
FOWNES BROS. & CO., NEW YORK CITY

KETCHUM, GINÁ & SHARP
Architects

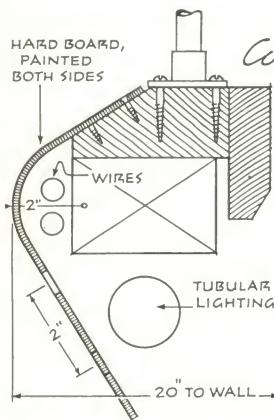
DISPLAY UNITS



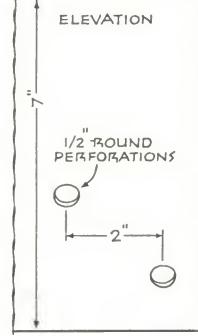
Ben Schnall



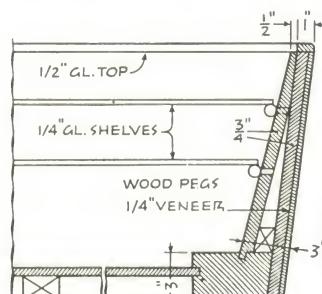
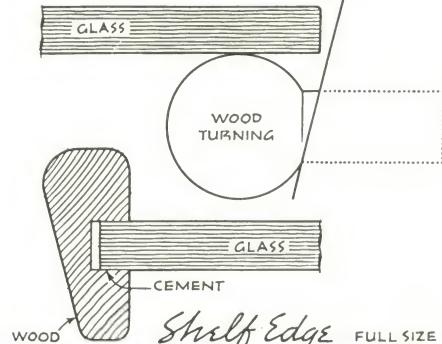
Section 1 1" SCALE



Cove Light 3" SCALE

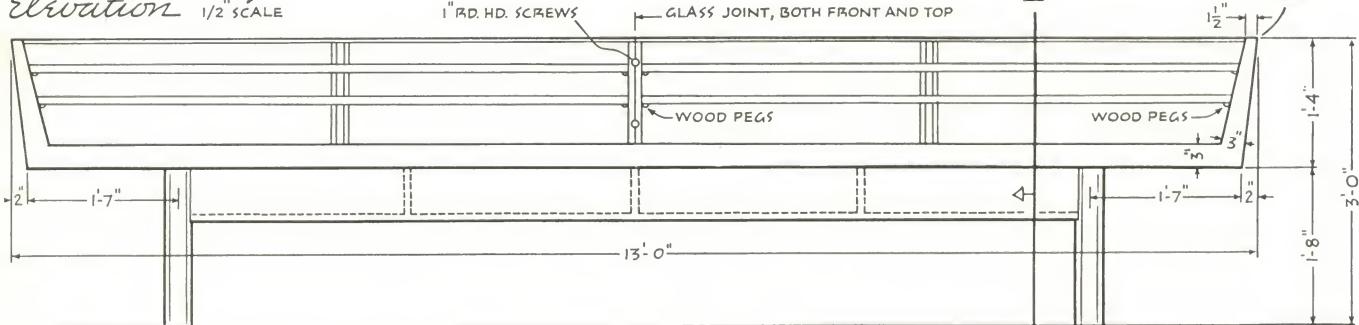


Shelf Peg FULL SIZE



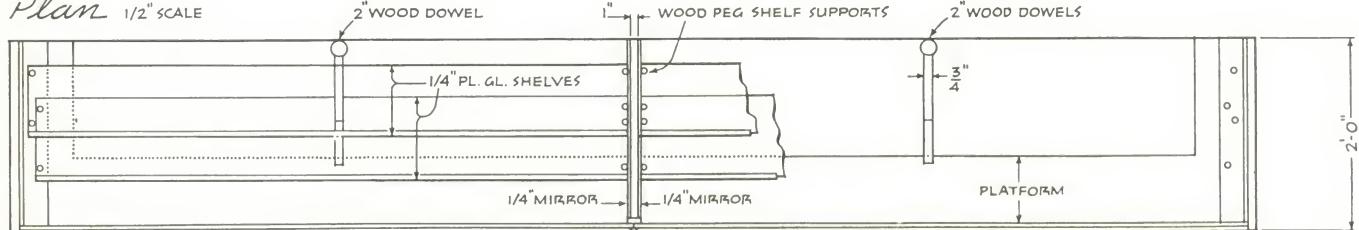
Section 2 1" SCALE

Elevation 1/2" SCALE



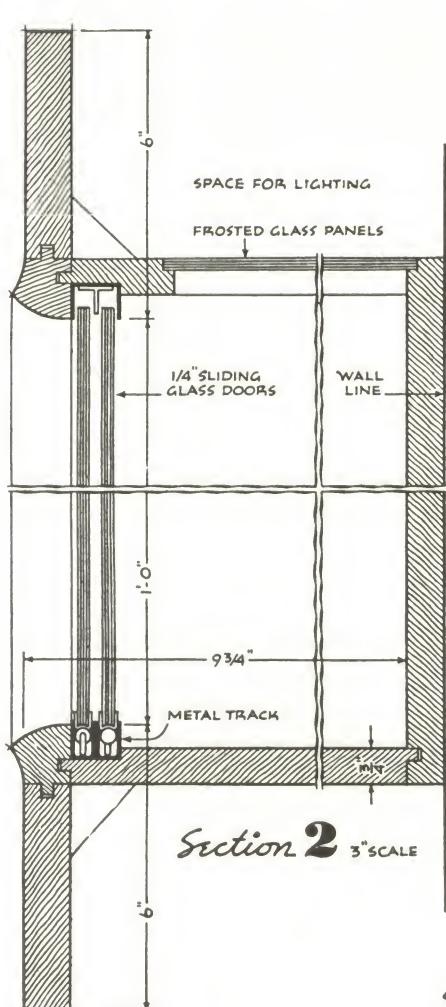
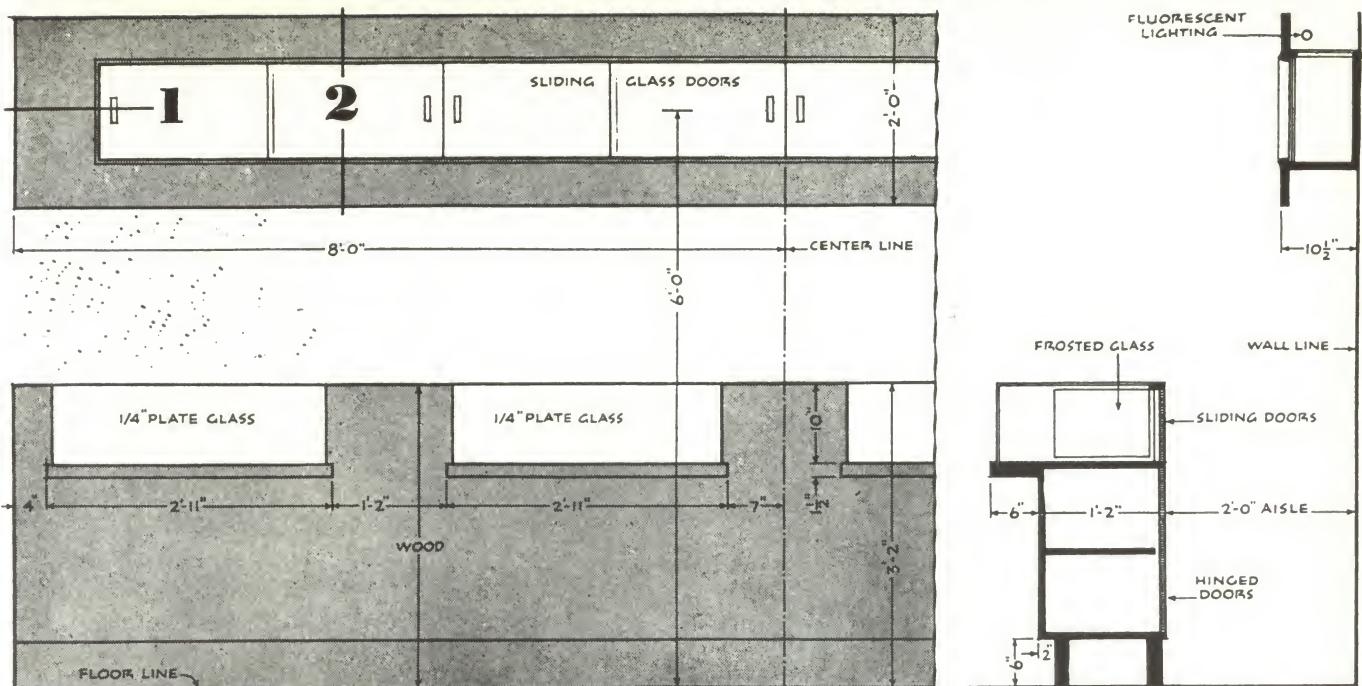
1 2

Plan 1/2" SCALE



LA REINE CANDY SHOP,
NEW YORK CITY

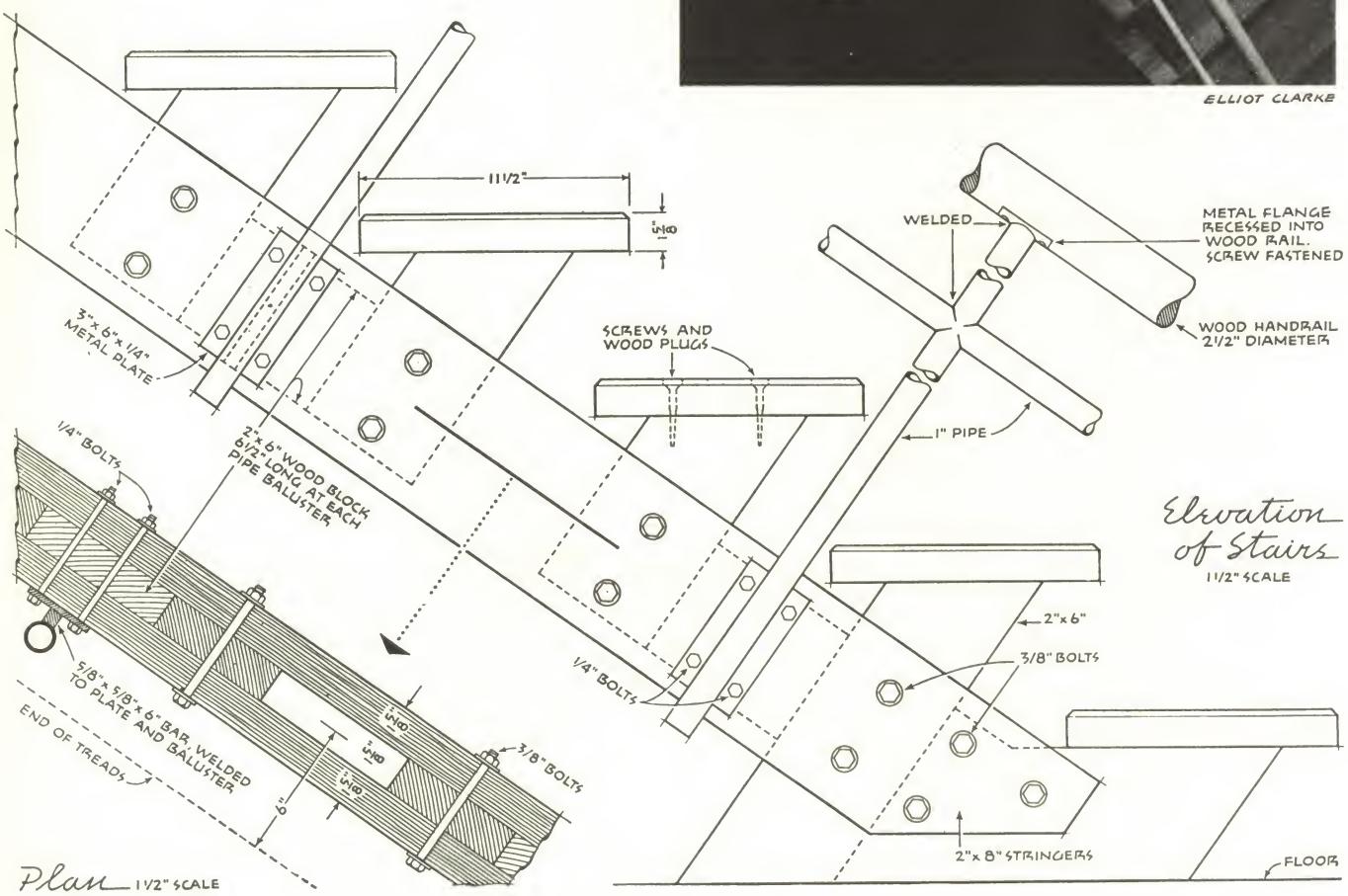
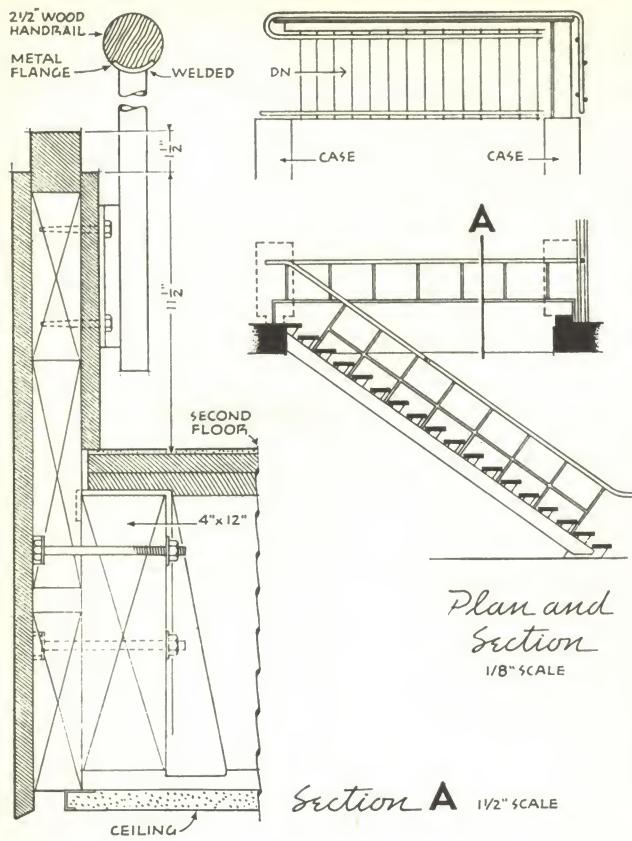
SIMON SCHMIDERER: FELIX AUGENFELD, ARCHITECT:
ASSOCIATED DESIGNERS



SPECIALTY SHOP
NEW ROCHELLE, N. Y.

Progressive Architecture

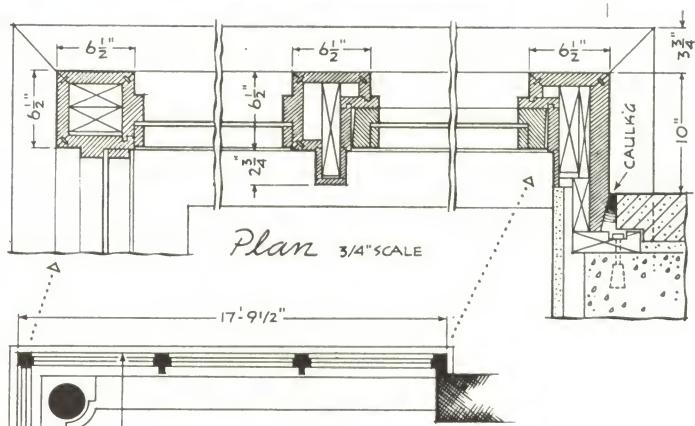
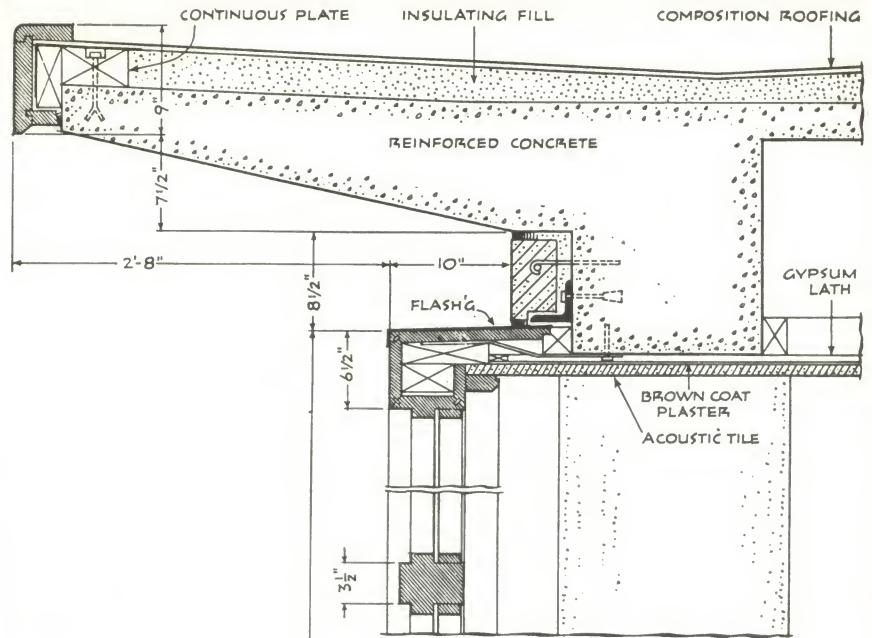
MARIE FROMMER
Architect



BONNIER'S SHOP
New York, New York

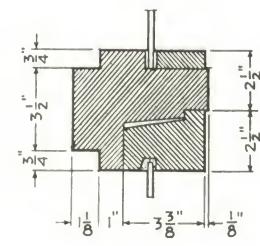
Progressive Architecture

WARNER-LEEDS
Architects

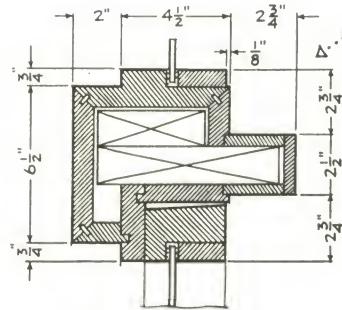


Plan of Window 1/8" SCALE

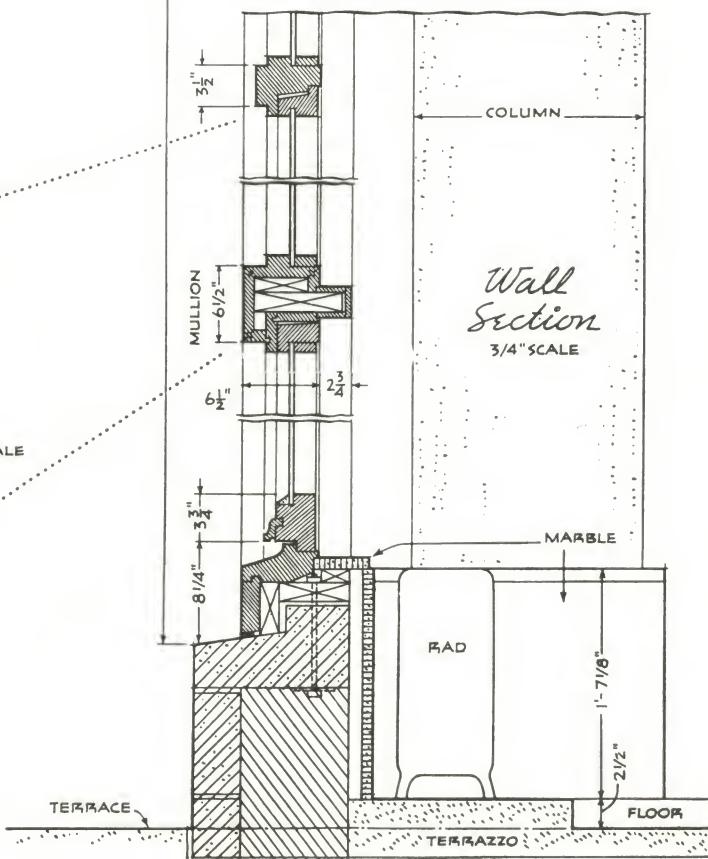
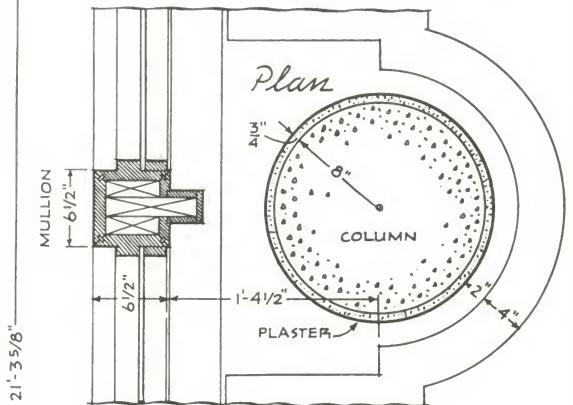
ALL MULLIONS
EQUALLY SPACED



Typical Details 1 1/2" SCALE



HOLABIRD & ROOT, Architects

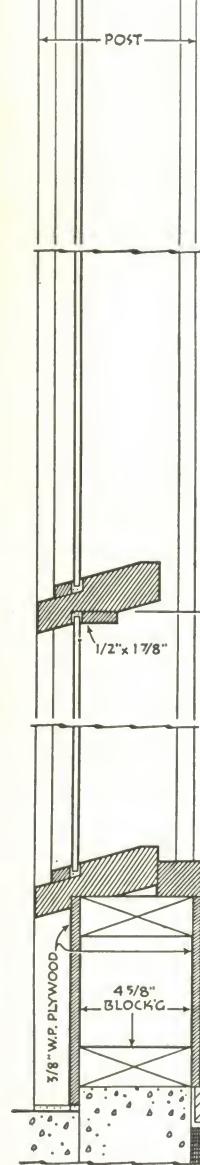


p/a selected detail

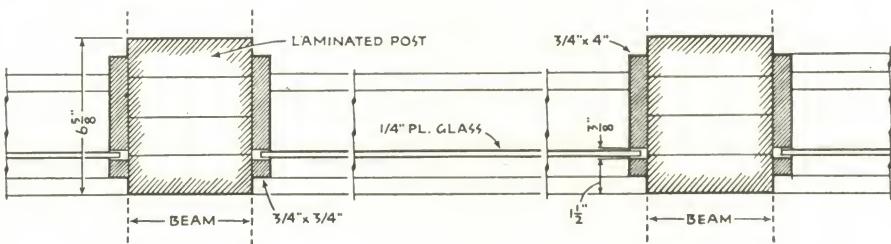
city hall: window wall



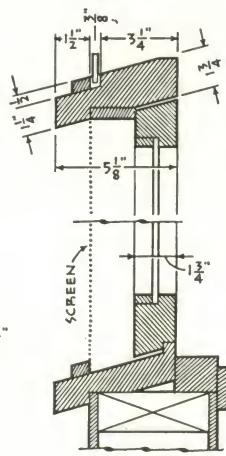
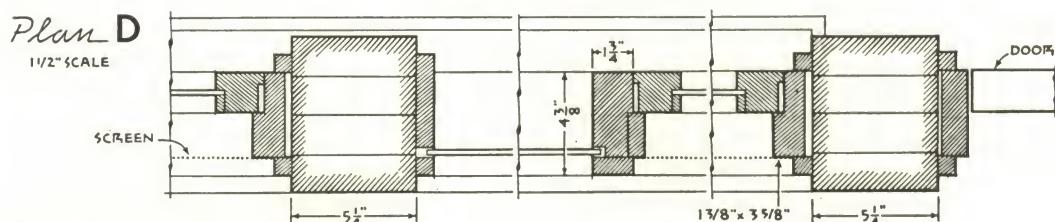
REYNOLDS, PHOTOGRAPHY INC.



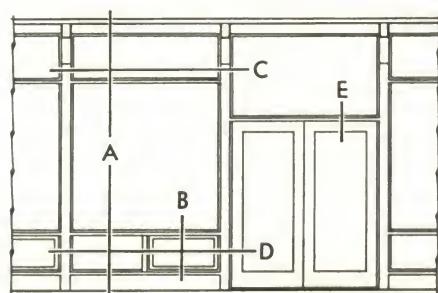
Plan C
1 1/2" SCALE



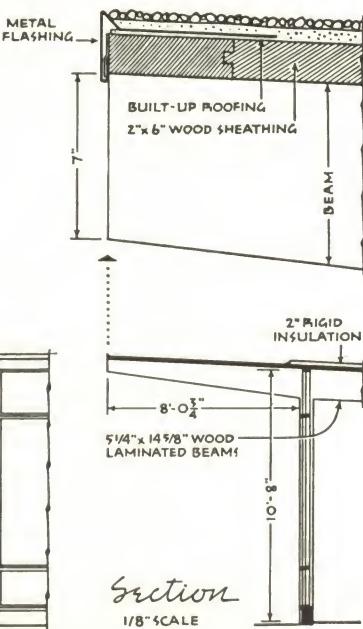
Plan D
1 1/2" SCALE



Section E
1 1/2" SCALE



Section 1 1/2" SCALE



Section A 1/2" SCALE

BRIGHTON CITY HALL, Brighton, Colo.

James M. Hunter, Architect

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